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THE
PATHOLOGY, DIAGNOSIS, AND TREATMENT
OF THE
DISEASES OF WOMEN

BY

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SOCIETY OF BOSTON; HONORARY FELLOW OF THE
MEDICAL SOCIETY OF HELSINGFORS

*A New American from the Fourth Revised and Enlarged London Edition
With 236 Illustrations*

EDITED WITH NOTES AND ADDITIONS

BY

HARRY MARION-SIMS, M.D.

ATTENDING SURGEON TO ST. ELIZABETH'S HOSPITAL, NEW YORK, ETC.

VOLUME I



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EDITOR'S PREFACE.

The author sent the proof-sheets of this edition of his book to me with the request that I would supervise their passage through the press, and add any notes I might choose to make. Having known him from my early boyhood, I accepted the compliment, and determined to give the book the widest circulation possible.

I was fortunate in securing for the work a place in "*Berminham's Medical Library*."

The book has some points of peculiar interest. It insists on better nutrition. It advocates the mechanical pathology of some forms of uterine disease, viz., that pathological changes are produced by mechanical causes. The wood-cut illustrations of uterine displacements are of life size, which is an aid to the beginner. We have long known that the nausea of pregnancy is a neurosis, a reflex symptom which the author shows very conclusively to be the result of some form of uterine distortion, and which is always relieved by appropriate mechanical treatment. He further demonstrates most satisfactorily that hysteria in all its protean forms is a uterine reflex symptom (not ovarian as has been generally supposed), dependent always on flexion or malposition; and that to remedy the latter is to cure the former.

This book has many other features of interest, which the student will readily appreciate.

The notes I have added are embraced in brackets in the text.

HARRY MARION-SIMS.

267 MADISON AVE., NEW YORK, April, 1883.

PREFACE

. TO

THE FOURTH EDITION.

Ten years have elapsed since the last edition of this work was published. What I have gained from observation and experience during those ten years has been here faithfully and truly set down.

In the last edition of this work I endeavored to enunciate and demonstrate certain general principles as to the pathology of diseases of the uterus, more especially to show that the changes in the shape and position of the uterus are directly or indirectly responsible for the sufferings and discomforts attendant on the affections peculiar to the female sex. The conclusions expressed ten years ago have been tested and verified by subsequent experience; and additional facts and observations on this subject will be found in this volume.

I have, however, in the present edition advanced a step further, and have explained, to my own satisfaction at all events, how and why it is that changes in the shape and position of the uterus are so liable to occur: what, in short, are their predisposing causes. An extended experience has enabled me to submit a further and, as I consider, a most important generalization on the subject. What I have to say, in fact, amounts to this, that alterations in the shape and position of the uterus are rarely witnessed except in individuals whose general strength has become seriously impaired by a systematic, and often a lengthened, practice of taking little food. The term "chronic starvation" appropriately designates this condition; and a long course of observations has convinced me that it is a most important factor in the production of the class of diseases above alluded to.

These considerations are fundamental in regard to the subject of the pathology of the uterus, and they underlie all that is to be said, or that can be said, on the matter. In the present work, much attention has been bestowed on the development and application of the above-mentioned principle, which is, of course, nothing more or less than this—the dependence of *local* ailments on *general* ones. If there be nothing very novel in this doctrine, it may be at all events of some service to give it, in a more precise manner than has hitherto been attempted, a definite application to the class of maladies treated of in this work.

The question as to the nature of Hysteria and Hystero-epilepsy has much occupied my attention, and the present volume contains a collection of observations on the subject, together with deductions, which I submit to the candid and dispassionate consideration of my readers.

An important class of cases are those in which Pregnancy is associated with Flexion of the Uterus. This is a subject of great interest, as also a cognate one, viz., the cause of the Vomiting of Pregnancy. In the present volume will be found essays on these subjects, and an accumulation of evidence in the shape of cases in proof of the truth of the doctrines I some years ago enunciated on this latter question.

A considerable number of new illustrations have been added to the new edition; and most of the new figures representing flexions and displacements of the uterus are drawn life size, and the various mechanical appliances for their treatment are drawn the actual size of the instruments, with the view of rendering the descriptions and directions for treatment more explicit and less liable to misinterpretation.

The greater part of this new edition has been re-written.

G. H.

36 BERKELEY SQUARE, October, 1882.

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THE
PATHOLOGY, DIAGNOSIS, AND TREATMENT
OF THE
DISEASES OF WOMEN.

CHAPTER I.

GENERAL CONSIDERATIONS RESPECTING THE DISEASES OF THE
SEXUAL ORGANS IN WOMEN.

RELATIONS SUBSISTING BETWEEN GENERAL AND LOCAL DISEASES.—Importance of Maintenance of proper Nutritional Power as affecting the General Condition of the Patient—Nutritional Weakness of the Uterus a Cause of Softness of the Uterus, and an Important Factor in causing other Diseases of the Organ—Relative Importance of Affections of the Uterus and the Ovaries.

The performance of the functions of various organs of the body in a normal manner implies a general condition of health of all the organs, and disorder of one of them has generally a disturbing effect upon others. Thus symptoms which at first sight appear to indicate local disease or disorder may, on more complete investigation, prove to be the manifestation of some more general disturbance. Hence a sound view of a particular case must of necessity be a broad view: there is room for reproach to anything like an exclusive view. Exclusiveness may be on either side. There can be no question that it is as much a mistake to regard the "local" as the "general" element in the case exclusively; and while the importance of the "local" element may have been sometimes over-estimated in the practice of gynecologists, the fact remains that the "general" has also very much too frequently usurped the proper place of the other in the practice of those who are not gynecologists. The practitioner who refuses to look at the two sides dispassionately will possibly make great mistakes.

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He is certain, at all events, to lose many opportunities of doing good and relieving suffering.

In the study of the diseases of the female sexual organs we meet with many and complex problems, and much uncertainty and diversity of opinion still prevail in regard to the decision of many of these problems. It is quite evident that no decisive advance can be made in the settling of disputed points unless the primary one of the connection between "general" and "local" disease be more satisfactorily determined. It may be confidently expected that some of the more important of existing differences of opinion will be found reconcilable by full consideration of the facts adducible in reference to the manner in which "general" disease is capable of influencing or predisposing to or actually producing "local" diseases of the female sexual organs. It is the more likely that this satisfactory result will be attained, inasmuch as the explanations to be given involve concessions to both parties and give distinct credit to each of them. It may be said that it is no new thing to point out the importance of the "general" element in dealing with gynæcological cases. Many previous writers have dealt with it, some prominently so. But there are various important considerations in connection with this subject which it is my object to develop more particularly in the following pages, and for which some degree of novelty may be claimed. I refer to the subject of a deficient and defective nutrition of the body generally and its effects on the sexual organs, more particularly the uterus, in predisposing to or in the production of actual disease. There appear to be good grounds for believing that, excluding accidents and injuries, the primary defect, the first step in the downward course, leading finally to established local disease, is a general weakening or impairment of the nutritional activity of the body generally. There is, first, a general weakness influencing more or less the whole of the organs of the body in an injurious sense; there is, in the second place, a particular and local weakness evidencing itself in the local disease and particular local symptoms. The clinical facts which are adducible in favor of this generalization are before us, and its correctness may be attested without difficulty by simple observation of facts daily passing under our eyes.

It may be urged that the statement in the foregoing paragraph is a truism. It is so. But it is nevertheless a truth

which has yet to be applied to the explanation of various difficulties encountered by gynæcological pathologists.

In the year 1867 I adopted as the subject for an inaugural address at University College, "Nutrition the Basis of the Treatment of Disease."* I mention this as showing that my attention had been some time ago attracted to the importance of "general" views. But it was not until the last five or six years that the more advanced and complete generalization as to the influence of general imperfect nutrition in producing disease of the female sexual organs forced itself on my notice. I had been for a long time unable to account satisfactorily for the fact that in cases coming under my notice the uterus was so often found in a soft, flaccid state. Observation of very numerous cases and careful inquiry into the antecedents of these cases gave so uniform a history of long-standing mal-nutrition—a general kind of semi-starvation, in fact—that I gradually acquired the conviction that there was a real connection between them, and that the relation was actually one of cause and effect.

In the last (third) edition of this work the very great frequency with which patients suffering from uterine symptoms were found to present various forms and degrees of flexion of the uterus was pointed out, and the opinion expressed that these sufferings are traceable to the altered shape and position of the uterus. But it was also insisted upon that "the change in the form and shape of the uterus is frequently brought about in consequence of the tissues of the uterus being previously in a state of unusual softness."†

The nature and cause of this unusual softness of the uterus have, since the publication of the last edition of this work, much occupied my attention. This unusual softness, which had formerly much puzzled me to account for, I have since seen reason to trace to a previous general weakness and want of nutrition of the uterus. It is met with in those individuals, for the most part, who had been imperfectly and inadequately nourished for some time previously. Instead, therefore, of attributing this unusual softness to chronic inflammation, which was the best explanation of

* In 1879 I delivered an address to the Harveian Society on "Chronic Starvation" (see *Lancet*, Jan., 1879), in which the same subject was further developed.

† 3d ed. 1872, p. 2.

the matter I could offer in the year 1872, I now wish to substitute for it the explanation just given.

The foregoing remarks are anticipatory in a sense. And they apply for the most part to the uterus, which is only one of the female sexual organs; but they will indicate the view entertained by the writer as to the importance of the "general" and its relations to the "local" element in discussing the subject of diseases of the female sexual organs.

A further question is to be considered. The female sexual organs consist principally of two organs—the uterus and the ovaries. What is the comparative preponderance of these organs in the origination of disease, and what is the comparative importance of diseases of the one or other of them?

Some gynæcologists attribute the greater degree of importance to the uterus, while others consider diseases of the ovary the more important. The difference of opinion is attributable, for the most part, to the different interpretation of symptoms by advocates of opposing views. Thus, pain located laterally in the pelvis is considered to indicate ovarian irritation or inflammation by some authorities, whereas a different explanation would be given by opposing pathologists.

It is necessary to weigh well the clinical and other facts adducible in favor of the uterine or ovarian origin of observed symptoms. The ovaries are undoubtedly most important organs in the female economy, and have indeed a great influence, in an indirect manner, on diseases of the uterus. In one sense of the word the ovaries may be said indeed to be more important than the uterus. Yet the majority of clinical observers are of opinion that uterine disorders numerically preponderate over the disorders of the ovaries. The ovaries are liable to one form of disease—cystic degeneration—which is a malady of very great importance; while the uterus is liable to alterations and disorders, many of which involve continuous suffering and give rise to severe or troublesome symptoms. On the whole, it appears that symptoms are far more frequently traceable to the uterus than to the ovary as the offending organ. The inflammatory conditions of the peritoneum covering the ovaries or parts immediately adjacent are considered by some pathologists as having special importance, "pelvic peritonitis" being supposed to be a condition frequently present, and capable of giving rise to many of the

symptoms which are more ordinarily set down to the uterus. These do not, however, appear to be good grounds for regarding this condition as a common one. Of late years the introduction of Battey's operation has been the means of acquainting us with the fact that the ovaries are, at all events, occasionally affected with contractions, degeneration of tissue, and other important changes. It seems certain that the list of ovarian diseases is undergoing an increase.

CHAPTER II.

NATURAL HISTORY OF THE UTERUS AND OVARIES.

NATURAL HISTORY OF THE UTERUS.—Effects of Menstruation—Pregnancy—Sexual Intercourse.

OVARIES: PHENOMENA OF MENSTRUATION AND OVULATION.—Vascular and Erectile Apparatus of Female Sexual Organs: Bulb of the Vagina: Bulb of the Ovary—Mechanism of Ovulation—Rouget's Researches—Menstruation—Recent Researches by Kundrat, Engelmann, Williams, and Leopold as to the Nature of Menstruation—Source of the Blood—Phenomena observed—Age, Periodicity, Duration, Quantity, and Quality of the Discharge.

NATURAL HISTORY OF THE UTERUS.

The uterus is an organ which has an extremely important position in the female economy, and the changes and modifications witnessed in its shape, size, and texture, in its vascular condition, and in its relations to the nervous centres, exercise a profound influence on the individual who is the subject of them. They produce discomfort of various kinds, they interfere with the natural performance of important functions, prevent procreation, and involve many other minor inconveniences; not infrequently they predispose to the occurrence of other disorders capable of shortening life or bringing it to a sudden and abrupt conclusion.

Life in the woman is made up of three periods: 1. The period preceding that of sexual activity; 2. The period of sexual activity; 3. The period following the cessation of sexual activity. The peculiarities appertaining to these three several periods appear to be almost wholly dependent on, and subordinate to, the condition of the sexual organs at the several periods in question. The sexual organs consist essentially of the uterus and the ovaries, the due exer-

cise of the sexual functions being dependent on the presence of these two organs in their integrity. In the exercise of the sexual functions the ovary is the more essential organ of the two: physiological reasoning conclusively indicates this. It may be that alterations in the ovaries, imperceptible perhaps to us as observers, influence the economy at large in a profound manner; but what we know at present rather justifies the belief that, in cases where the disorder is dependent on the sexual organs, the uterus is the particular organ most frequently at fault.

Before puberty has arrived, the uterus is small and undeveloped, and has, functionally, no existence. And it is remarkable that, during this period, and whilst it remains in its dormant condition, it is not liable to disease. Disease of the organ only begins to show itself when it begins functionally to live. After the climacteric age has been passed, and uterine life has ceased, we find that the condition of the uterus is one very closely analogous with that which subsists before the arrival of puberty. The uterus becomes atrophied—physiologically dead—and the liability to disease for the most part ceases. Thus, during the first and the third stages of the woman's life, equally, the uterus is an organ lying inactive and almost powerless in the economy. But this is not all. The uterus not only enjoys a life of its own, so to speak, but it has a life or a succession of lives within this. If the woman becomes impregnated, the uterus, previously developed and matured, forthwith starts on a new road of development, and after the term of gestation has been completed, relapses into its previous condition. The building up of the gravid uterus is not more wonderful than its subsequent destruction. Successive pregnancies involve each the formation and destruction of the organ; for each pregnancy there is the life and death of an entire uterus.

The uterus has thus a life of its own, distinct from, and in a certain degree disconnected with, that of other organs of the body. And from all these considerations it results that the diseases of the uterus have also peculiarities separating them from diseases of other organs.

In diseases of all organs of the body, wherever situate, we witness for the most part only alterations of natural processes; and the diseases observed in the uterus, in like manner, bear upon them the impress of their locality. It is not intended to imply that pathological processes and

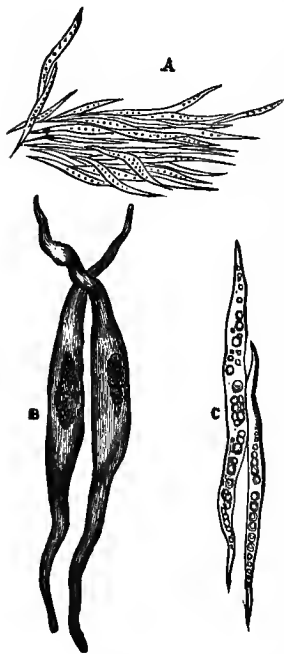
conditions, such as are met with in other organs of the body, may not be met with in the uterus. Such may unquestionably be the case: cancer, for instance, attacks the pylorus and the uterus, and the disease is in both positions integrally the same, although the tissues among which it makes its inroads are not of the same kind in the two cases. But it will be conceded, that the interpretation of the pathological and other changes in the uterus would be difficult by one unacquainted with the peculiarities of its structure and with the nature of the functions which it is called upon to perform in the economy. And it results from what has been now said that the peculiar structure and physiological functions of the uterus impress upon it pathological conditions and characteristics, with which we have nothing thoroughly identical, and sometimes not even analogous, in the pathological conditions of other organs of the body.

There are two great functions in which the uterus is prominently concerned, and which are most powerful disturbing influences in regard to its textural condition; these are, menstruation and gestation. There is a third in which it is also concerned, viz., sexual congress, which is also capable, though probably in a less degree, of affecting its textural condition. How, and why, the exercise of these functions respectively affects the physical condition of the organ, and leads to disease, must now be pointed out.

MENSTRUATION.—During the whole of sexual life, the uterus is each month the seat of an unusual congestion of all its blood-vessels. Its circulation is more active, it enlarges, the sinuses—which are to be seen on making a section of the uterine walls as cavities of considerable size—become filled with blood, and its tissues engorged and expanded. It will be presently shown (see “Phenomena of Menstruation”) how profusely the organ is supplied with blood-vessels; it is further to be remarked that the veins are unprovided with valves, the result of which is that congestion of the uterine plexuses readily occurs. The menstrual congestion of the uterus lasts for some days even in health, the duration being probably from first to last not less than a week, and where the period is prolonged it may be considerably over a week. Scanzoni estimates the ordinary duration of menstrual congestion indeed as nearly half of the whole four weeks which usually constitute the “period.” Prolongation of the menstrual period, or unusual intensity of the congestion for a shorter time, will

thus lead in the end to a chronic condition of engorgement; for if the heart be weak, or if other circumstances interfere with the quick removal of the excessive quantity of blood from the organ, the vessels do not recover their proper size, they remain permanently larger than they should be, and

FIG. 1.*



as a consequence the uterus itself acquires a size which is excessive and unnatural.

Thus, under ordinary circumstances the menstrual process tends to produce uterine congestion and enlargement, but when menstruation is disturbed, this congestion is intensified and perpetuated. Scanzoni—whose classical treatise on chronic metritis† appeared almost simultaneously with the first edition of this work—considers sudden suppression of menstruation as one of the most important causes of chronic inflammation of the uterus; for the engorgement of the uterus natural to menstruation becomes, when unrelieved, a true congestion, the blood stagnating in the widely-open vessels, and thus leading to other important textural changes. The severe and troublesome headache not uncommonly observed at the outset of the menstrual period, where there is a temporary obstruction to the escape of the blood from the

uterus, indicates probably the transference of this congestion from the uterus to the head.

PREGNANCY.—The changes in the uterus which are the result of gestation are of a very important character.

The most remarkable change is the increase of the *size* of the organ which is observed; for after the fœtus has been

* Fig. 1 represents three conditions of the uterine muscular fibres: A. Fibres from the uterus in the non-gravid state; B. Fibres from the fully developed gravid uterus; and C. Fibres undergoing fatty degeneration after parturition.

† "Die Chronische Metritis," 4to. Berlin, 1863.

expelled and the uterus has been thoroughly emptied of its contents, its bulk greatly exceeds that of the unimpregnated uterus. Under favorable circumstances, as is well known, the size of the uterus rapidly diminishes during the few weeks following parturition, until it finally becomes nearly, but not quite, as small as before the process of gestation commenced. This diminution in the size of the uterus is the result of a peculiar process, by which the very large muscular fibres, whose contractile power has been exercised in expelling the uterine contents, become first affected with fatty degeneration; and then undergo absorption and completely disappear. The vessels of the uterus also become at the same time much reduced in size. The process by virtue of which the uterus returns to its normal condition is now known as the *process of involution*. The time occupied in involution is probably about two months, the greatest diminution in size occurring during the second week, after which time, under ordinary circumstances, the enormous muscular fibres characteristic of the pregnant uterus have become disintegrated. Immediately after delivery the uterus has a thickness of one inch and a length of about eight inches; but by the end of the first month the reduction in size is nearly completely accomplished. The muscular fibres begin to undergo transformation into fatty molecules about four days after labor, and while the metamorphosis is proceeding the uterus is friable and soft. The new tissue of the uterus begins to be evident at the end of four weeks after parturition, and shortly after this we may conclude that the uterus ought to be reconstructed.* During a month and upward after parturition, the uterus is consequently unduly large and vascular, and it very frequently happens that circumstances interfere with the efficient and timely completion of its involution. If the placenta be not expelled rapidly, and the uterus remain unduly enlarged for a time, this circumstance gives rise to subsequent difficulties, for coagula form in the sinuses of the uterus, and even after expulsion of the placenta these coagula by their bulk interfere with the due contraction of the organ. Again, if the expulsion of these coagula be deferred, as is not very uncommon, the return of the

* See Heschl's valuable researches on this subject, "Zeits. der Gesells. der Aerzte." Wien. 1852. Also Dr. Farre, "Cycl. An. and Phys.," and Dr. Priestley "On the Development of the Gravid Uterus." Lond. 1860.

uterus to its normal size is proportionately interfered with. Again, when the nutritive changes of the body generally are in a low state, and when the individual is debilitated from any cause, the normal metamorphosis of the uterine tissue is disturbed, the blood circulates less rapidly, the effete material is not removed, and the organ continues large, unwieldy, and congested. Defective involution of the uterus may thus be a consequence of various disturbing causes in operation after childbirth, all of which tend to leave it larger than it should be. The new uterus, constructed by growth of new material, and built up in the existing large framework, is also too large and its blood-vessels too full, and this creates a very strong predisposition to the perpetuation of an abnormal nutrition-process. This increased size leads to mechanical changes in its position and shape. It is almost unnecessary to mention how very important, in postponing the normal involution process, must be the occurrence of puerperal fever, uterine phlebitis, etc. Abortions are both an effect and a cause of defective involution of the uterus; but quickly repeated pregnancy undoubtedly tends to produce it, and thus to predispose to chronic inflammation; the reason being that before the uterus is thoroughly renovated, it is called upon again to undergo the gestation process. Quickly recurring pregnancies, especially when they occasionally result in abortions, both cause and are caused by a defective involution process.

SEXUAL INTERCOURSE.—The erection of the uterus described by Rouget and others as occurring during ovulation (see "Phenomena of Menstruation") occurs also during the act of intercourse. At least this is highly probable. Sexual excesses predispose to chronic congestion of the uterus, inasmuch as they involve too frequently repeated, or too long continued, engorgement of it. In young women recently married it is by no means uncommon to meet with a condition plainly brought about by excess of the kind here alluded to, and but little is required under such circumstances to produce a chronic engorgement of the organ, and the further train of evils usually following in its wake. It appears to be quite certain, also, that unnatural excitation of the generative organs in women leads to uterine mischief of various kinds, and promotes and maintains a chronic congestion of the organ and of its vessels, tending to give rise to various secondary disorders.

This brief retrospect of the mechanical results of the performance of the natural functions of the uterus will suffice to show the direction in which we are to look for the explanation of its various morbid conditions. The nutrition-process in the uterus is, as a consequence, very liable to derangement, this derangement resulting in the production of important alterations in the size, consistence, and structural condition of the organ.

OVARIES: NATURAL HISTORY.—PHENOMENA OF MENSTRUATION AND OVULATION.

The importance of the physiology of menstruation and ovulation in the study of the morbid processes witnessed in the female generative organs is obvious.

All the generative organs are well supplied with blood. When in a state of rest they contain but a moderate supply of blood, but under excitement this is very largely increased. This increase is effected by the distension of certain structures—erectile organs—which are at other times comparatively empty.

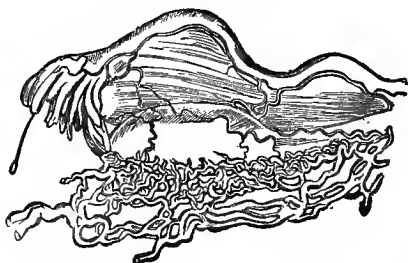
The orifice of the vagina has on each side of it an elongated leech-shaped body, the *bulb* of the *vagina*, composed of a large number of tortuous veins, closely packed together in a fibrous investment, prolonged upwards in the middle line to the glans clitoridis. This is a provision for erection, the blood being detained in the veins by the action of suitable muscles. Further, the vaginal canal is surrounded with a belt of blood-vessels, forming a large plexus of veins. The arrangement of the vessels supplying the uterus is of considerable importance, and Rouget* has particularly investigated this subject in a memoir of great value. The utero-ovarian artery, which supplies the uterus with blood, passes upward. Its first branches, to the cervix, are small; but opposite the body of the uterus it gives off suddenly twelve to eighteen short trunks, which pursue at once a spiral direction and divide into a large number of smaller branches. When injected, these vessels are seen to lie so close as to quite cover the sides of the uterus. The body of the uterus thus receives a very profuse arterial supply, and the spiral convolutions of the branches may be seen projecting into the sinuses of the uterine structure. The

* "Recherches sur les Organes érectiles de la Femme." Brown-Séquard's "Journ. de Physiol." tom. i.

veins in which these arteries terminate are still more numerous and capacious, and they form a plexus covering the sides of the body of the uterus. Below, these veins end in the pudendal veins, in the middle they end in the uterine veins, and above in the spermatic veins. It results that the sides of the uterus are covered with a layer of considerable thickness, composed of blood-vessels having great capacity, and it is further to be recollected that the tissue of the uterus itself contains large sinuses—receptacles for venous blood.

The ovaries are supplied with blood from the utero-ovarian artery and from the spermatic. The arterial trunk passes along near the base of the ovary, and in its passage gives off a series of ten or twelve branches; these branches divide at once, assume a convoluted arrangement, and finally enter the ovary. The veins coming from the ovary form a special bulb, *the bulb of the ovary*, composed like the

FIG. 2.



vaginal bulb of a series of tortuous veins, susceptible of considerable distension. The bulb of the ovary has an elongated form, its length a little exceeding that of the ovary, it is somewhat flattened, not quite half an inch thick, and a little deeper than this; altogether its size is not

much inferior to that of the vaginal bulb. The pampiniform plexus of veins, a further portion of the vascular apparatus here met with, lies below the ovarian bulb in the folds of the broad ligament. The bulb of the ovary is a structure only recently known. The first allusion to it seems to be in a paper communicated by Mr. Traer to the Anatomical Society of Paris. It is well depicted in Dr. Savage's beautifully illustrated work,* and in Rouget's memoir (*loc. cit.*) it is made the subject of an elaborate investigation conjointly with those of the other erectile structures of the female generative organs (see Fig. 2).

* "Illustrations of the Surgery of the Female Generative Organs." London, Churchill, 1863.

In the memoir of Rouget it is shown that the function of ovulation is probably greatly dependent for its efficient performance on the presence of muscular structures not before described in the human subject. Erectility is dependent, as Rouget remarks, on association of structures for reception of a large quantity of blood, and for detention of that blood. The bulb of the vagina is an erectile structure; the muscular apparatus connected with this is well known. And with reference to the bulb of the ovary, Rouget endeavors to show that there is a muscular apparatus for the control of its vascular supply, and for constituting it an erectile organ. In lower animals the ovary is brought into coaptation with the oviduct by a mechanism which is not quite the same, though on the same general plan, in different species. Thus in birds, where we find the muscular apparatus connected with the ovaries very well marked, the oviduct is surrounded by a muscular structure or envelope within which the coils of the oviduct lie. The contractile fibres are so placed that a twofold effect follows from their contraction, viz., the infundibulum is opened out, and at the same time approximated to the ovary in order to receive the ova. The muscles producing this effect are of the involuntary kind, and radiate after the manner of a fan in the folds of the membrane enclosing the oviduct.

Rouget, after introducing other anatomical facts in reference to the comparative anatomy of the subject, goes on to state that in the human female there are to be found muscular fibres arranged on an analogous plan; that they form a system covering the uterus, ovaries, and appendages; and that the muscular fibres belonging to this system pass from the lumbar region to the ovary and to the fimbriæ near it, while others pass from the uterus over the ovary, and onward to the fimbriæ of the Fallopian tube also, and that the simultaneous contraction of these two sets of fibres has necessarily the effect of bringing the fimbriæ near the ovary. The mechanism of the process is, he contends, identical in the case of the human subject and in animals lower in the scale.

Thus then, the muscular fibres described, together with the vascular apparatus of the uterus and ovary, constitute together, if we follow Rouget, the erectile structure of the internal generative organs. Ovulation is accompanied by the following phenomena: the Graafian follicles being mature, or nearly so, the muscular fibres above described are

set in action and the fimbriæ of the tube are thus made to grasp the ovary, at the same time that they induce and maintain a condition of erection of the ovarian bulb. This spasmodic erection is present so long as the ovary and the Fallopian tube remain in contact, and when the rupture of the Graafian follicle happens, the ovum passes into the proper channel. Ordinarily the ovipont occurs, because of the presence of ripe ova in the ovary; and with this process it has been almost generally admitted the phenomena of *menstruation* are associated, although of late years this view of the matter has been strongly opposed. It is probable that the act of congress often determines an ovipont, which without it would be postponed for a time. Here the act of intercourse induces erection of the external generative organs, and doubtless also that erection of the internal organs above alluded to, the result being escape of an ovule. Rouget contended that the uterus is equally with the ovary an erectile organ, that its erection occurs simultaneously with that of the ovary, and that the final result of this erection, during which the uterus is kept gorged with blood, is exudation of that sanguineous fluid from the surface of its lining membrane, forming the menstrual discharge. This view of the cause of the hæmorrhage has been of late seriously impugned.

The action of the muscular apparatus in bringing the ovary to the open end of the Fallopian tube is probably greatly assisted by the engorgement of the ovary and of its bulb, for when the pelvic vessels are injected artificially after death, the effect is to bring the ovary close to the open mouth of the Fallopian tube; and it has indeed been assumed by some that the injection of the ovarian bulb is a principal agent in effecting the adjustment necessary for the ovipont.

We thus see, in the vascular and muscular structures of the internal generative organs, provision made for the supply of vast quantities of blood to these organs. In the human female the engorgement and full distension of the vessels occur periodically, the period of engorgement being that of menstruation; while it would appear that it is liable—during sexual life at least—to occur also during intercourse. We may in the next place consider briefly certain of the other phenomena of menstruation.

The process known under the names “menstruation,” the “catamenial discharge,” etc., is one in the production of

which two organs are concerned—the uterus and the ovary. Menstruation is usually an indication of the fact that the ovaries are in activity—in other words, that ova are being formed, developed, and matured in the ovaries. That menstruation may occur in cases where the ovaries have been removed, appears possible from certain observations made in the last few years. By “menstruation” is meant a periodical discharge of a sanguineous fluid from the uterus, this discharge being attended, as already remarked, with an engorged or congested state of the uterus, ovaries, and adjacent organs, in most cases by hyperæsthesia of the parts in question, and by disturbances, of various kinds and degrees, of other functions of the body. It is, in a certain sense, analogous to the *œstrus* in the lower animals, the presence of menstruation being an indication that the woman is capable of being impregnated; but the woman differs from these animals in this respect, that she is capable of being impregnated, not at the time during which the discharge itself occurs only, but also during the intervals between the periodic discharges. Very important additions have been made to our knowledge of the physiology of menstruation during the last ten years. The minute anatomy of the lining of the uterus at different periods had been studied carefully by Kundrat and Engelmann, by John Williams, Leopold, and others, and various important facts have come to light.

An essential element in the question of the changes occurring in the uterine mucous membrane during menstruation is the nature of the membrane itself, and its relation to the uterine wall. Dr. John Williams* points out that the uterus should be regarded as a mucous membrane, whose fibre-cells have undergone great development. He considers that three fourths of the thickness of the walls of the uterus is really “mucosa,” the tubules of this mucosa extending more deeply into the wall than is generally supposed. He considers, therefore, that the terms muscular wall and mucous membrane as generally applied are misnomers. This view of the matter, supported by arguments derived from the analogy of the structure of the stomach, and of uteri of other animals, is original, and has important bearings on the vexed question as to the changes in the uterine mucous lining during menstruation. Kun-

* “Obstet. Trans.,” vol. xvi. p. 206.

drat and Engelmann in 1873 published their researches on the changes in the uterus during the catamenia. They considered that the uterus is active not only during the menstrual flow, but both before and after, and that the menstrual activity is, in other words, spread over a much longer time than that represented by the actual menstrual flow. They were of opinion that the hæmorrhage of menstruation is due to fatty degeneration of the mucous membrane, the occurrence of which degenerative change they substantiated by their observations.

Dr. John Williams in 1874* brought before the Royal Society of London the results of observation of the uteri of nine women who had died in different stages of the menstrual period—his conclusions being that menstruation consists in rapid growth and decay of the mucous membrane; the discharge consists of the débris of the mucous membrane; the bleeding is from the vessels of the body of the uterus; that, the mucous membrane having undergone fatty degeneration, blood becomes extravasated into its substance; the membrane then undergoes rapid disintegration and is entirely carried away with the menstrual discharge. In a later essay† Dr. Williams has published results of further investigations with observations of other cases, and in a third paper still further cases,‡ making nineteen observations altogether.

Barnsfather in 1875§ records his clinical experience, extending over some time, with frequent microscopic examinations of menstrual secretions, and he finds exfoliations present in all cases, the exfoliations being thicker in cases of menstrual difficulty.

Leopold|| has given the results of his observations in several cases, which are to the effect that the disintegration of the mucous membrane is, when it occurs, very slight, and affects only the great superficial layer of the mucous membrane; while in some cases, where death occurred a few days after the period, the mucous membrane was still of considerable thickness. Leopold did not find evidence of fatty degeneration in his cases.

* The structure of the mucous membrane of the uterus and its periodical changes.—*Proc. of Royal Soc.* 1874.

† "Obst. Trans.," vol. xvi. p. 206.

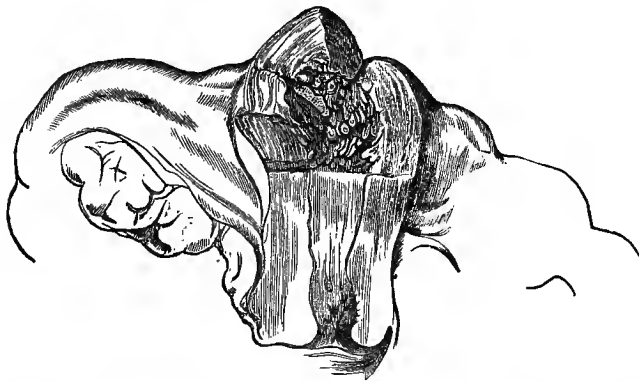
‡ *Obstet. Jour.*, Dec. 1877.

§ *Cincinnati Med. News.*

|| "Die Uterusschleimhaut und die Menstruation." Leipzig, 1877.

The evidence which is to be gathered on the subject, although by no means uniformly pointing to the disintegration and separation of a considerable thickness of the mucous membrane in normal menstruation, shows the extreme probability of a destruction and removal of the superficial layer in all cases. It is perfectly certain that the mucous membrane, at or about the menstrual period, is a pulpy, thick, exceedingly vascular substance. The hæmorrhage occurs either from the open mouths of the tubules, either with accompanying disintegration of the superficial layer, or without it. That fatty degeneration does occur is undoubted, though it seems open to question if this is universally the case. It does not appear that the whole thickness of the mucous membrane is ever removed; and, indeed,

FIG. 3.



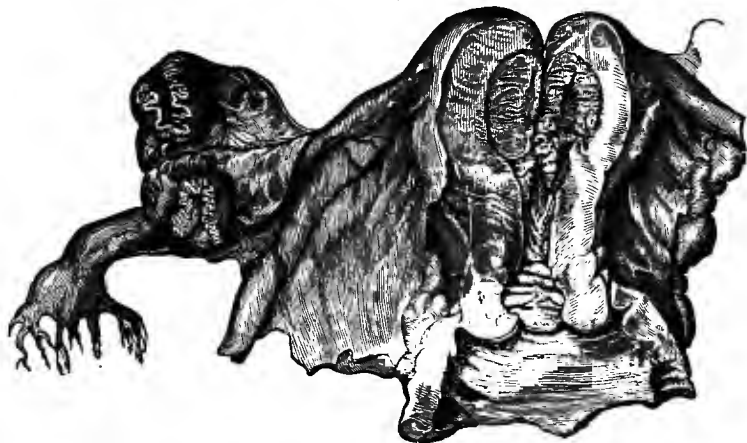
this is hardly possible if we accept Dr. Williams's view that the mucosa, in a physiological sense, includes much of the muscular wall of the uterus. It is probable that further inquiries will reconcile the present apparent discrepancies between the results of late observers; some of them are, indeed, explainable by want of accurate information as to the precise date of the last menstruation.

Some years ago I had opportunities on four or five occasions of examining the uterus during menstruation. In the case of a woman who died while menstruating, after an operation for hernia, I saw the uterus lined by a deeply red, velvety soft structure, on the free surface of which were to be seen the open mouths of the uterine glands (see Fig. 3).

Fig. 4 represents the condition observed in a young woman who died, while menstruating, from the effects of a burn, in University College Hospital. In other cases I have found the mucous membrane in actual process of disintegration.

The changes in the ovary coincident with menstruation may next be alluded to. Supposing matters take their ordinary course, the ovary produces on its surface, and periodically, matured Graafian follicles, one or more at a time, causing the ovary to present an elevation the size of a nut-kernel, and constituted by the follicle distended with blood and containing the ovule. This condition of the follicle is certainly frequently present at the time menstrea-

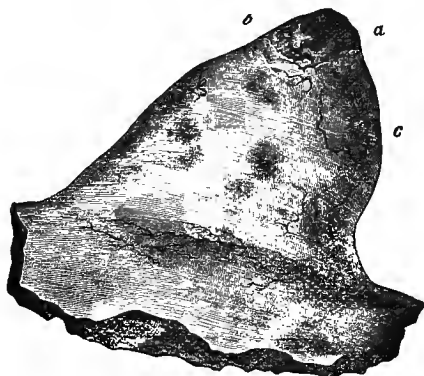
FIG. 4.



tion occurs, but it is probable that such a matured condition may be present at other times also. The next event is the rupture of this follicle and passage of its contents into the Fallopian tube—the ovipont—provided for in the manner already described. Fig. 5 (from Dr. Farre) shows a Graafian follicle preparing for rupture; Fig. 6 a section of the same follicle, exhibiting its cavity and a blood-clot within. Rupture of one or more follicles probably occurs at, or before, or shortly after, each menstruation, though not limited absolutely to that period. After the follicles have discharged their contents, the cavity of the follicle and the interior of the Fallopian tube may or may not remain in con-

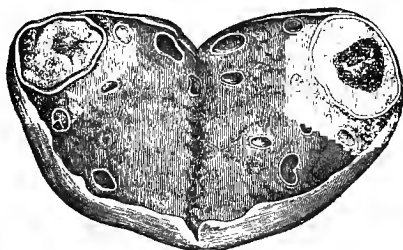
nection with each other: if further bleeding from the interior of the follicle occurs, the blood will or will not find its way into the uterus, according to circumstances. It is obvious that the continuous application of the Fallopian tubes to the ovary is expedient during the whole time follicles are

FIG. 5.



liable to become ruptured, or there might be escape of the follicular contents into the peritoneal cavity. Such escape and consequent failure of the ovipoint is not very uncommon, leading to sterility, to extra-uterine foetation, to effusion of blood into the peritoneal cavity, and other disorders.

FIG. 6.



The Graafian follicle, having discharged its contents, the blood within it ordinarily coagulates, the cavity shrinks up, and by the successive growth of follicles lying deeper in the ovarian stroma, the used-up follicle sinks back toward the middle of the ovary, becomes smaller and smaller, and dis-

appears at the end of three or four months.* The retrogression of the follicle is marked also by changes of color due chiefly to the transformation the blood-clot undergoes, and to the changes in the very vascular lining of the follicle. After bursting, the follicle is known as a *false corpus luteum*.

From observations made in several subjects Dr. John Williams believes that ova are usually discharged from the ovary before the appearance of the monthly flow with which it is connected.* In ten out of fourteen, rupture of a follicle or hæmorrhage into its cavity had occurred before the return of the catamenia; in one it was doubtful whether rupture of a follicle or the appearance of the discharge would have occurred first; in two a menstrual period had passed without maturation of a follicle, and in one a periodical discharge was imminent, though the ovaries contained no mature Graafian follicle.

Leopold's observations tend also to show that the Graafian follicle bursts before the menstrual period, rather than after it. On the other hand, observations are not wanting to show that the ovipont in some cases occurs after the commencement of the menstrual flow. On the whole it seems probable that there is a variation in regard to the time of the ovipont, though it more often than not occurs near the menstrual period. It seems probable, from the observations of Coste, that it is not uncommonly determined and brought about by sexual intercourse. The question of the ordinary time of the ovipont is interesting as bearing on that of the time of impregnation. The Hebrew custom is in favor of the view taken by Dr. Williams, but the known fact that the spermatozoa may remain active for several days after intercourse has occurred vitiates conclusions drawn from actual experience as to the efficiency of single acts of intercourse at particular periods.

The commencement of the process of menstruation is usually preceded by certain changes in the outward conformation and appearance. The general signs of the arrival of puberty in the woman are thus eloquently enumerated by Brierre de Boismont: "Puberty at last arrives. An immense revolution takes place in the system of the young girl. To her slim lank form succeeds plumpness and grace. Her step, uncertain and languid, becomes firm and spirited.

* On the discharge of ova and its relation in point of time to Menstruation.—*Proc. of Roy. Soc.* 1875.

The soft glance of the eye reveals the fire of the soul. Changes not less remarkable take place in her physique. The chest, narrow and contracted, swells and expands. The lungs breathe more fully. The heart throws with greater force the blood to the extremities. The celluloadipose tissue develops the admirable contour which constitutes the beauty of woman. Of all the organs that feel the influence of puberty, the uterus and its annexes are those in which it is most evident.

"The uterus, ovaries, Fallopian tubes and breasts increase immensely. The bones and muscles partake of this general development. Even the moral offers differences not less marked. The young girl, truly an infant in her tastes, inclinations and desires, experiences all at once a complete metamorphosis. Restless and dreamy, she does not comprehend the new sentiments that agitate her. All the senses are quickened; a soft glow pervades her whole nature. An unusual fulness is felt in the pelvic organs, the most important phenomenon of puberty, that which transforms the girl into the woman, now manifests itself by the catamenial flow which heralds the fitness for maternity."*

There are also sometimes present in young women who are about to menstruate certain sensations, more or less marked in different cases, and most intense in those cases where the appearance of the menstrual discharge is a little delayed. These symptoms are known by the term *molimina menstruationis*. The chief symptoms of the menstrual molimen—the attempt at menstruation, the evidence of ovarian activity—are as follows: A sensation of weight and fulness in the pelvis and its neighborhood, together with a "bearing down" or dragging sensation; pains radiating from the loins downward toward the perinæum, and occasionally extending down the thighs; tenderness over the hypogastric and inguinal regions; a feeling of heat in these regions so intense as to be described "as burning" by some patients. irritability of the bladder, frequency of micturition, and inability to evacuate the bladder, are more rarely observed. The digestive system sympathizing, there are diarrhœa, or constipation, nausea, inappetency. Fretfulness, or change of temper and disposition, may also be noticed; in fact, many of those symptoms usually classed under the denomi-

* "De la Menstruation dans ses rapports physiologiques et pathologiques, 8vo. Paris, 1842, p. 1.

nation "hysterical" may be present. The local symptoms are the most constant. When symptoms of the above character are observed at intervals of three or four weeks, persisting in each periodic recurrence for two, three, or four days together, in a young woman who presents outward signs of having arrived at puberty, they are evidence of the existence of ovarian action, and constitute the menstrual molimen. The characteristic point about these symptoms is their periodicity.

In some cases where menstruation is absent there is witnessed a periodical hæmorrhage, or exudation of blood from some other part, as from the lungs, stomach, conjunctiva, surface of an ulcer, etc. In such cases there is said to be *vicarious menstruation*.

The age during which the cataménial discharge occurs varies; but, as a rule, it begins during the ages of 14 and 16, and ceases between the ages of 40 and 50. For about thirty years of the woman's life this discharge recurs periodically. With reference to the age at which it commences, we have observations by Robertson,* Whitehead,† Brierre de Boismont,‡ and Szukits.§ In 358 cases observed by myself, menstruation occurred for the first time

At the age of 10 in 3 cases					At the age of 18 in 23 cases				
"	"	11	"	12	"	"	"	19	"
"	"	12	"	29	"	"	"	20	"
"	"	13	"	43	"	"	"	21	"
"	"	14	"	73	"	"	"	24	"
"	"	15	"	62	"				
"	"	16	"	61	"				
"	"	17	"	33	"				
					Total . . 358				

Statistics of 2,696 cases at University College Hospital obtained from women who applied at this hospital to be attended in their confinements, and collected for me by Mr. Walter Rigden, are as follows:

Of the 2,696 cases, menstruation occurred for the first time

* "Observations and Notes on the Physiology and Diseases of Women, and on Practical Midwifery," 8vo. 1851.

† "On the Causes and Treatment of Abortion and Sterility," 8vo. 1847.

‡ *Op. cit.*

§ See an abstract of his observations in Schmidt's "Jahrb." bd. xcvi. p. 331.

At the age of 9 in 3 cases				At the age of 18 in 150 cases			
"	"	10	14	"	"	19	76
"	"	11	60	"	"	20	29
"	"	12	170	"	"	21	7
"	"	13	353	"	"	22	3
"	"	14	560	"	"	23	2
"	"	15	540	"	"	24	0
"	"	16	455	"	"	25	0
"	"	17	272	"	"	26	2

The mean age is 14.96, about. The greater number of these cases were hospital out-patients.

The mean age in 4,000 cases referred to by Whitehead was 15 years 6 $\frac{3}{4}$ months. In 2,169 cases collected by Robertson, Lee, and Murphy, the mean age was 14 years 11 months. Szukits found the mean age to be, in 665 women born in Vienna, 15 years 8 $\frac{1}{2}$ months; and in 1,610 women born in the country, 16 years 2 $\frac{1}{2}$ months, which result, as regards the influence of town life in hastening the first appearance of the catamenia, agrees with that arrived at by Brierre de Boismont in Paris. The latter observer states that amongst women belonging to the upper classes of society, the average age of commencement was as early as 13 years 8 months. Although the age 14-16 is the most common, yet there are numerous exceptions to this rule. In Robertson's 450 cases, ten began to menstruate as early as 11 years old, and nineteen at 12. The youngest of Szukits' cases was, in the town class 11 years and in the country class 10 years old. In three out of 358 cases noted by myself, menstruation began at the age of 10 years, and although the largest number of my own cases—73 out of 358—menstruated first at the age of 14, a very considerable number menstruated first as late as the age of 18.

The mean age of the commencement of the catamenia appears to be about two years earlier in warmer than in more temperate climates. Thus in India the mean age in 597 cases collected by Robertson was 13 years. It was formerly supposed, on the assertions of Montesquieu and Haller, that Hindu women began to menstruate, as a rule, at 8, 9, and 10 years of age; but facts collected by Robertson conclusively show the incorrectness of this opinion. It appears, however, from Robertson's tables, that "the proportion of Hindus who arrive at puberty at the ages of 12, 13, and 14," is far greater than is observed in women living in our own temperate climate. This early arrival of the catamenia is attributed by Robertson to the influence of

race—to the fact, that for many generations (upward of three thousand years) it has been the custom of this people to give their daughters in marriage immediately on the arrival of puberty. This custom has, in Robertson's opinion, produced and perpetuated a kind of "family peculiarity." Montesquieu and Haller held that "climate" is the determining cause of this difference. More recent statistics are in the same direction. Thus Vogt's researches show that in Norway the average first appearance is the age of 16·12. We may contrast this with the average at University College Hospital of 14·96. Toulin and Lagneau have collected observations on cases in various latitudes presented to the International Medical Congress at Paris in 1867,* the general conclusions from which are in confirmation of the fact of the earlier appearance of menstruation in hot climates. And it would appear that climate is really the determining element in the difference observed, between extremely hot and extremely cold countries, a difference represented by from three to four years.

The *latest age* at which the catamenia may commence is open to great variations; but, as a rule, it is not postponed beyond the age of 18. Brierre de Boismont found that, out of 352 "*femmes de la capitale*," twenty began to menstruate at 18 years, six at 19, five at 20, two at 21, four at 22, and two at the age of 23. The latest age given by Robertson is also 23. Szukits gives the age of 22 as the latest at which the first appearance occurred in the Vienna class; but of those from the country one woman began to menstruate as late as 25. The latest age in my own series was 24. In a case quoted by Meissner, the catamenia first appeared at the age of 42.†

The cessation of menstruation occurs in the majority of cases between the ages of 40 and 50. The number of cases in which the cessation takes place before 40 is greater than the number of those in which the final appearance of the catamenia occurs after the age of 50. (Brierre de Boismont.) There appears, however, to be a great diversity in the results obtained by various observers on this point. Thus, in the cases, 181 in number, of the author just quoted the age at which the final cessation most frequently (18 out of 181) occurred, was 40; while in Robertson's cases it was

* New Syd. Soc., "*Bien. Retrospectif*," for 1867-8, p. 377.

† Meissner, "*Frauenzimmerkrankheiten*," ii. 741.

most frequently observed (in 26 out of 77 cases) at the age of 50; in the majority of the cases observed by Szukits at 46-50. The earliest period at which the cessation may take place is shown by the following recorded facts: Of Brierre de Boismont's 181 cases, the cessation was noticed in seven before the age of 30, the earliest being at the age of 21. The earliest cessation in Robertson's 77 cases was at the age of 35. Szukits gives two cases at the age of 30.

The following table shows the results of my observations in 55 cases:

Menstruation ceased at the age of 30 in 1 case				Menstruation ceased at the age of 46 in 2 cases			
"	"	33	" 1 "	"	"	47	" 4 "
"	"	34	" 2 "	"	"	48	" 5 "
"	"	35	" 1 "	"	"	49	" 4 "
"	"	37	" 1 "	" and 1 still men- struating at that age			
"	"	38	" 3 "				
"	"	39	" 1 "	"	"	50	" 4 "
"	"	40	" 2 "	"	"	51	" 3 "
"	"	41	" 2 "	"	"	53	" 1 "
"	"	43	" 8 "	" and 1 still men- struating at that age			
"	"	44	" 2 "				
"	"	45	" 6 "	Total . 55			

Perhaps the most interesting class of facts in connection with this subject has reference to the latest age at which menstruation may occur. There is very little doubt that some of the cases related as cases of late menstruation are not cases of menstruation proper at all; but it must be allowed that occasionally a discharge, sanguineous and periodic, may be present at a very late age. Gardien relates the case of a woman said to have been perfectly regular at the age of 75. Up to the age of 55 there are a sufficiently large number of cases; but after that age true menstruation is exceedingly rare. Brierre de Boismont gives five after the age of 55, out of 181, one being as late as 60. Robertson (*op. cit.* p. 185) gives four out of 79 as occurring after 55, two of which were at the age of 60, and one as late as 70. Lastly, Szukits gives one case (his latest) at the age of 60.

Some, apparently well authenticated, cases of menstruation at very advanced ages, viz., at 91, 80, 87, 59, and 70 years of age, are related in the work of the late Dr. D. D. Davis.*

* "Principles and Practice of Obstetric Medicine," vol. i. p. 239.

In reference to the foregoing statements, it is probable that many of the apparent exceptions to general rules quoted were cases in which pathological elements were more or less intermixed.

Menstruation ceases earlier in India; but everywhere the duration in years is much the same. For about thirty years menstruation continues. Robertson is of opinion that early cessation is chiefly noticed in those cases in which the function has been established at an early period. In most of those cases, however, in which the function continues to be exercised up to the age of 53 or 54, the period of commencement has not been unusually late; in such cases, the menstrual life far exceeds the average of thirty years.

Dr. Beigel,* the able editor and translator of the two former German editions of this work, gave this observation on 500 cases: of 126 cases where menstruation had ceased, there were 9 cases of late menstruation.

Menstruation ceased at 51 in 1 case	Menstruation ceased at 65 in 1 case
" " 52 " 2 "	" " 72 " 1 "
" " 53 " 1 "	
" " 54 " 1 "	Total . . 9
" " 55 " 2 "	

Periodicity.—The usually accepted statement is that the time included between the day of the appearance of the discharge and the corresponding subsequent day is twenty-eight days—a lunar month; but the difference presented by individual cases in this respect is so great as to show that any rule generally applicable must have rather a wide range. Many women menstruate regularly every three weeks; and a less number menstruate every calendar month, or a little over. In another class of women there is great irregularity, the period varying from time to time consistently with health. It is only, then, in the majority of instances that menstruation occurs every lunar month. There is often evidence that peculiarities in respect to the menstrual period are transmitted from one generation to another.

Number of Days during which the Discharge continues.—In 562 cases examined by Brierre de Boismont, the discharge continued 8 days in 172 individuals; the number of days next frequently observed was 3; the next 4. The conclusion arrived at by this author was that the menstrual flow

* German edition of this work (Enke, Erlangen), p. 245.

continues longer in towns than in the country; and longer in small, nervous, delicate women, than in those who are tall, robust, and of a sanguine temperament; longer also in those who lead a sedentary, easy, voluptuous life than in those who follow active occupations, whose diet is conducive to health, and whose habits are regular.* In women who are beginning to menstruate, the discharge lasts generally a short time for the first few months, its duration increasing subsequently. The time during which the discharge continues is, in general terms, three to seven or eight days; but the observer must be prepared to meet with great variations in this particular.

Quantity.—Late observers (Magendie excepted) consider the typical quantity of sanguineous fluid which is lost at each period to be three to four ounces, or even less than this.† The older estimates considerably exceed this in amount. The quantity appears to be greatest about the middle of the period in the majority of cases. Sudden cessation for some hours together, followed by copious discharges, whether accompanied by coagula or not, is abnormal; for when there is no impediment the flow continues persistently and uninterruptedly, though it may be more in quantity at one time of the day than another.

Quality of the Fluid discharged.—The researches of Dr. Whitehead, Donné, and others, have conclusively shown that the discharge observed is really composed of blood; and that when obtained immediately from the uterus, and before it has been subjected to the action of the acid mucus of the vagina, it is coagulable just as is ordinary blood. As an illustration of this fact we find that, when the menstrual flow is excessive, clots are not unfrequently discharged. Ordinarily, as it flows from the vulva, it has acquired an acid reaction, and is no longer coagulable. For the first few hours the discharge is paler, it then becomes of a deeper red, and again appears of a lighter color as it is about to disappear. The odor of the menstrual secretion is peculiar; formerly extraordinary effects were attributed to it, which it is unnecessary to enumerate here. The varying qualities of the vaginal and cervical secretions have probably more influence in altering the qualities of the menstrual fluid than any varieties of the fluid itself as it exudes from the uterus.

* *Op. cit.* p. 142.

† Farre, *loc. cit.* p. 663.

CHAPTER III.

EXAMINATION OF THE UTERUS AND OVARIES.

DIGITAL EXAMINATION OF THE UTERUS FROM THE VAGINA.—Position of the Patient.

DOUBLE EXAMINATION OF THE UTERUS.

DIGITAL EXAMINATION OF THE OS UTERI AND OF THE VAGINAL PART OF THE CERVIX UTERI.—Normal Condition of the Os and Cervix—Method of Examination—Apparent absence of the Os Uteri; various causes—Unusual Softness of the Os Uteri from Pregnancy or other Causes—Unusual Hardness of the Lips of the Os Uteri; its Causes—Size of the Os Uteri—Variations in the Length of the Vaginal Portion of the Cervix Uteri; Relation of Pregnancy to this Condition.

EXAMINATION OF THE UTERUS BY MEANS OF THE SOUND.—The Instrument; Method of Introduction—Variations in the Length and Direction of the Uterine Canal detected by the Sound.

EXAMINATION OF THE OS UTERI BY MEANS OF THE SPECULUM.—General Rules—Method of Using the Instrument—Description of Various Instruments.

EXAMINATION OF THE OVARIES.

In order to obtain precise information as to the physical condition of the uterus and ovaries, a physical examination is indispensable. The examination is made by means of the finger introduced into the vagina, sometimes also into the rectum, and further information may often be elicited by means of palpation over the hypogastric region of the abdomen.

DIGITAL EXAMINATION OF THE UTERUS FROM THE VAGINA.

To practice digital examination of the uterus from the vagina, the patient is usually placed on the side. The patient should be laid on the side close to the edge of the couch, and the trunk of the body placed somewhat across the couch. The knees should then be drawn upward, so as to be quite at right angles to the body. This position enables the observer to reach with the finger much higher in the interior of the pelvis than is possible in any other way. It is sometimes necessary in cases of suspected pregnancy, *e.g.*, to examine the patient in the standing position, in order to detect more readily increase in the size and weight of the uterus, the presence of ballottement, etc. In the case of unmarried women, with an unruptured hymen, digital examination should not be undertaken unless there is a reasonable probability of the existence of some decidedly ab-

normal condition of the uterus. On the other hand, false delicacy should not be allowed to operate so as to prevent the recognition of conditions essential to health and comfort. In doubtful cases an examination by the rectum may be made first, and it can thus be determined whether further examination by the vagina is really required. Very valuable information as to the general shape and position of the uterus can be thus procured, the septum between the rectum and vagina being so thin that the practiced touch readily defines the uterus in this manner. Thus the hymen may be entirely avoided. It is found that under anæsthetic influence the resistance offered by the hymen is less, and thus digital examination is facilitated by the use of ether or chloroform.

The finger should be cleansed and covered with oil or unguent before being introduced. The finger should be introduced slowly and carefully, and by its means the roof, the floor, and the upper part of the vagina can be successively touched. The cervix and os uteri are also subjected to touch, and information as to the size, consistence, shape, and position of the uterus is obtained. Deliberation and care are necessary to the proper conduct of the exploration.

Ordinarily the finger introduced into the vagina can be made to touch the os and the vaginal part of the cervix uteri, but the body of the uterus, and, indeed, the upper part of the cervix, are not in a state of health easily accessible by this means of examination alone. To reach the fundus anteriorly the roof of the vagina must be pushed very firmly upward, and even then the effort may not be successful in the normal state of things. And it is quite impossible to reach the fundus posteriorly by this method of examination alone when the uterus is in its proper condition.

The digital examination of the uterus *per vaginam* is by far the most valuable and important means of acquiring information regarding its physical condition. Too much attention can hardly be bestowed in acquiring facility and dexterity in this method of examination, and it is certain that unless it be carefully practiced there is no safeguard against acquiring erroneous and inadequate notions respecting the case before us. It is, taken alone, far more valuable than any other method of exploration that can be mentioned, for although other methods may be required, they are all subordinate to this—the digital examination.

By means of the digital examination of the vagina also the condition of the ovaries can frequently be determined. Ordinarily the ovaries are not easily felt by the finger introduced as above directed, but if the ovary on either side lies unusually low it can be readily felt through the vaginal wall.

The physical exploration thus conducted gives valuable information respecting the presence or absence of thickening, or hardness, or tumors situated in front of or behind the uterus, or laterally; and abnormal conditions of the rectum—accumulations of fæces, etc., are often thus recognized when they would have been undetected or overlooked had this digital examination of the vagina been omitted.

Double Examination of the Uterus.—There are several methods by which the uterus may be more completely and exactly explored.

1. The patient being placed on the back or laid on the side with the axis of the body across the couch or bed, the forefinger of one hand is inserted in the rectum, and the fingers of the other hand placed above the pubes. Thus the shape and size of the intervening structures can, under favorable circumstances, be recognized more precisely. This method is useful also in cases where a vaginal examination is objectionable.

2. Or the forefinger of one hand is inserted in the vagina, and the fingers of the other hand placed above the pubes.

3. Or a sound is inserted in the bladder, and the finger into the rectum. This method is very serviceable in cases of suspected absence of the uterus.

4. A method suggested and practiced by Dr. Noeggerath, of New York, consists in dilating the urinary meatus, inserting the finger of one hand into the bladder and the forefinger of the other hand into the rectum. The shape and size of the uterus can be more perfectly and completely explored in this manner than in any other way. Dr. Noeggerath has examined as many as thirteen cases in this manner.*

The objection to this method is the necessity for forcible dilatation of the urethra. This forcible dilatation Dr. Noeggerath effects either rapidly at one sitting, using first a steel dilator and then metallic bougies until enough space is obtained to admit the finger, or more slowly by laminaria

* "American Journal of Obstetrics," vol. viii. p. 123.

tents. He found the effects of the dilatations severe in six cases (in all of the six dilatations, rapid under chloroform), producing frequent micturition, burning, sensations of pain, and in one case perimetritis, but in no case was permanent bad result observed. The general conclusion to be drawn from Dr. Noeggerath's experience would seem to be that this method of exploration is valuable, but its employment will probably be always limited to very exceptional cases.

5. Another means of double examination consists in introducing one finger into the rectum and the uterine sound into the uterus itself. The sound can then be felt through the rectum. (See Examination by the Sound.)

DIGITAL EXAMINATION OF THE OS UTERI AND OF THE VAGINAL PART OF THE CERVIX UTERI.

The size of the orifice of the os uteri, its shape, the hardness or softness of the lips of the os and of the adjacent structures of the vaginal portion of the uterus, are all open to considerable variation, and upon these variations conclusions may be very safely based as to the nature of the pathological or physiological alterations present.

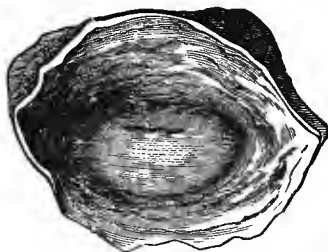
To appreciate the various changes which are liable to occur in the condition of the lower part of the uterus a knowledge of the normal condition and relations of the parts is essential. The finger must be educated to associate a particular sensation with a corresponding condition: an observer with an educated finger will thus be enabled to draw conclusions wholly unattainable by an inexperienced person. In the words of Gooch, "the finger soon gains the power of feeling when the mind has acquired the knowledge of what to feel for."

As preliminary to the discussion of this subject, some account of the normal condition of the os and cervix uteri is necessary.

"In the virgin and unimpregnated condition of the uterus," says Dr. Montgomery, "its mouth and the lower section of its neck, when examined by the finger introduced into the vagina, can be felt, as it were, projecting into that cavity from a quarter to half an inch. The part so projecting feels remarkably firm, is slightly tapering or conical in form, and about as large as the end of a man's thumb; having, at its termination in the vagina, a transverse opening whose lips or margins feel firm and well defined. This may be so far open as to allow the extremity of the finger

to be insinuated to the depth of an eighth or a quarter of an inch, sometimes a little more, sometimes not so much; or it may merely communicate a sensation of a slight depression almost without a cavity, such as is felt when the tip of the finger is pressed between the lateral cartilages at the extremity of the nose. Sometimes the os uteri differs very considerably from this description, being almost imperceptible from its diminutive size, and perfectly circular, and it is not very rare [here I do not agree with Dr. Montgomery, such a condition is very rare in the virgin] to find it opening at once from the upper extremity of the vagina without any projection of the cervix uteri into that canal, which to the finger seems to taper gradually to a point, and there terminate in the orifice of the womb, the margins of which are very indistinctly felt. . . . Once a

FIG. 7.



woman has borne children, or sometimes even one child, the conditions of the uterus are liable to be altered in several appreciable circumstances. The whole organ is apt to remain permanently larger than it was originally, and the cervix partaking of this change, is found broader, less prominent, and less firm in texture, while its shape is sometimes the reverse of that noticed in the virgin or nullipare, being indeed somewhat conical, but having the base of the cone downward instead of above; under the same circumstances the os is found of greater dimensions, and its opening much more distinctly transverse, admitting more readily the introduction of the end of the finger, and not unfrequently having its circumference or margins uneven, perhaps fissured, and giving the sensation of being a little lobulated." *

* *Op. cit.* p. 170.

The drawing, copied from one by Dr. Farre (Fig. 7, p. 64), represents the orifice as having a transverse shape. The transverse length of the orifice as here shown is, I believe, greater than it is found to be in the virgin os in the majority of cases.

FIG. 8.



The patient being placed on the side as before directed, the finger is then introduced into the vagina, the guide to the orifice being the great trochanter; for it will be found

that in the foregoing position the left hand being laid on the great trochanter the orifice of the vagina is immediately beneath it. A knowledge of this fact will be found useful in facilitating the necessary examination.

It will be borne in mind that under *ordinary* circumstances the finger passes about the distance of an inch before reaching the position of the hymen, where the true vaginal canal really begins, and the whole of the forefinger must be introduced before the os uteri is reached. Where the person is very stout the difficulty of reaching the os uteri by the forefinger is often considerable, and unless the knees are well drawn up it may be impracticable.

The drawing, life-size (Fig. 8, p. 65), exhibits a lateral view of the interior of the pelvis. The straight line graduated in inches shows the direction and extent of an ordinary examination by means of the finger.

The changes produced by pregnancy will be presently described more particularly. The above remarks apply only to the uterus in the non-gravid condition.

On examination it may be found that the uterus is *altogether wanting* (see chapter on Uterine Malformations). The vaginal part of the cervix, as already remarked, is generally shortened in women who have had children; in some cases it almost entirely disappears. It occasionally happens that in such cases the *os uteri becomes occluded*, and no opening can be found. Cases have been recorded of women who were pregnant, and in whom this occlusion had occurred apparently soon after conception, an incision in the lower part of the uterus having been rendered necessary in order to effect delivery. It may be, then, that the os uteri is not to be felt because it has become occluded in the above manner; but the signs of pregnancy would under such circumstances be observed; or it may be that the *os is situated unusually high*, and is not readily reached, as is the case more or less in the last month or two of *pregnancy*: there the presence of pregnancy should suggest the explanation. Or the *vagina may have become narrowed and constricted* by inflammatory adhesions (after a difficult labor), and may appear to terminate lower down than is really the case. *Abnormalities of the hymen* may lead to a like erroneous inference.

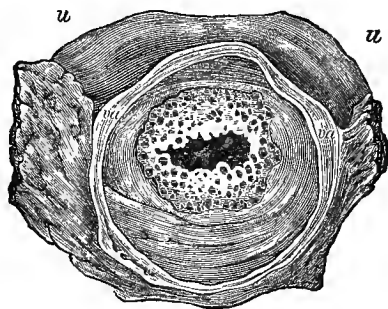
In *retroversion of the gravid uterus* the cervix uteri is often thrown up so high behind the pubic symphysis that no os can be felt. The same result may occur when *large tumors*,

fibroid, ovarian, etc., occupy the pelvis, lifting the os out of its place and so preventing its being felt by the finger.

SOFTNESS OF THE LIPS OF THE OS UTERI.—The physical conditions of the os uteri described as “hardness” or “softness” are perhaps the most important to which attention can be directed. Normally, the textures of the os, under which term we may conveniently include the parts surrounding the aperture, are, in the virgin, firm and resistant, and a peculiar impression is conveyed to the finger hardly to be described in words. This is to be considered as its typical physical condition, and it is necessary to be familiar with it in order to be able to detect variations from the healthy state.

Pregnancy.—Unusual softness of the os uteri and of its vaginal part is one of the signs of pregnancy, and, as such, deserves special and particular mention in this place. It is a peculiar kind of softness, giving the sensation of a soft texture overlying a harder one, and imparting a cushiony elastic feel, quite characteristic. It has been well compared to the sensation given to the finger when pressed into the glans penis in a state of erection. The surface of the lips

FIG. 9.



of the os are at the same time, in primiparæ, smooth and uniform; in multiparæ there may be fissures giving the lips a slightly lobulated arrangement. As regards the period of pregnancy at which this peculiar softness is observed, it is present during the second month pretty distinctly, but not so distinctly at this early period in primiparæ as in women who have already borne children. At the end of the third

or fourth month, however, the softness of the os uteri is very distinct in most cases, and, what is very important, the softness becomes associated at about the fifth month, and subsequently, with a peculiar shotty feel, arising from the muciparous glands around the os uteri becoming enlarged. Moreover, the softness becomes intensified as pregnancy advances: in many cases I have found the lips in an almost spongy condition, from extreme softness, near the end of pregnancy. The existence of this softness, and of other physical changes, in the vaginal portion, forms a very strong presumption in favor of the presence of pregnancy. This is well shown in Fig. 9 from a drawing by Dr. Farre. The softness alone, or a condition which at all events closely simulates it, is observed under other circumstances than pregnancy. The menstrual nismus is attended with a certain degree of softness of the part; but this could hardly mislead the observer if care were taken to make a second examination after the interval of a fortnight from the date of the first. Distension of the uterus, owing to the presence of fluid, a large polypus, hydatidiform degeneration of the ovum, may, each or either of them, give rise also to softening and fulness of the os in some degree simulating that due to pregnancy. In cancer of the cervix uteri there may be softness due to the presence of fungous growths, having a soft consistence, but in this case there is also *irregularity* of the surface.

As Montgomery observes, this softness of the os is most reliable from a negative point of view; thus, if the patient were supposed to be five months advanced in pregnancy, the absence of the softening would be strongly against such a supposition. This statement does not hold good in cases of cancer of the cervix uteri; in such cases there might be an absence of softness, and the patient might yet be pregnant. In ordinary cases, however, the presence or absence of this softening of the os and vaginal portion is extremely valuable from a diagnostic point of view.

Softness of the os is observed in cases of cauliflower excrescence of the os uteri. The softness due to this cause is, however, associated with a lobular enlarged condition of the lips and margins of the os uteri, eminently characteristic of the affection. In the very early stage of this affection, however, when the lips of the os are not much enlarged, this softness might, by a beginner, be possibly mistaken for that due to pregnancy.

The question as to the presence of undue softness of the os uteri is important in relation to the *condition of nutrition* of the organ. In another chapter it will be explained that one of the more important physical changes the uterus undergoes in cases of disease is a lessening of the proper hardness of the tissues, resulting in a condition of unusual softness of the cervix appreciable to the touch on digital examination.

HARDNESS cannot be said to be diagnostic *per se* of any particular disease of the uterus. Normally, the degree of hardness presented to the touch is considerable, and if the shape and size of the os and of the vaginal portion be not altered, the hardness alone is not significant. It would, however, enable us to decide against the presence of pregnancy in a case supposed on other grounds to have gone as far as the fourth or fifth month. Conjoined with *other* physical changes in the vaginal portion, irregularity, hypertrophy, etc. (see chapters on Cancer of the Uterus, Fibroid Tumor, etc.), it may become positively significant of other important conditions.

The os uteri is occasionally found to convey to the touch an impression as if hard rounded masses like shot, of variable size, were imbedded in it. These bodies are the follicular glands of the part distended with accumulated secretion. It has been already mentioned that during pregnancy rounded bodies are usually found to be present in the substance of the cervix, and there seems to be an identity between the bodies in question and those occasionally met with in this portion under other circumstances, which may attain a larger size, and which have been termed by several writers *Ovula Nabothi*.* And in cases where small cysts are found growing from the os, these cysts appear to have a like origin.

SIZE OF THE OS UTERI.—In the virgin, the uterus being healthy, the aperture is large enough to be just perceived by the touch. In the pregnant uterus the orifice enlarges, and at the fifth month is nearly large enough to admit the point of the finger. In the latter case, this enlargement of the orifice is associated with softening of the lips of the os, with the presence of the muciparous glands, uterine tumor, etc. When the orifice is so large as to admit the finger, soft-

*Some remarks on the nature of these bodies will be found in Dr. Tyler Smith's work "On Leucorrhœa," p. 143.

ness being absent, this increase in size may be dependent on one of the several following conditions:—In cases of large fibrous tumors of the uterus encroaching on the cavity, the lips are separated to a considerable extent, but they are hard and firm. Such is also more usually the case where polypus of the uterus of large size is present. The separation of the lips occurs earlier in polypus than in cases of fibrous tumor.

The os is also widely open in cases of enlargement of the uterus due to deficient involution of the organ after delivery. In women who have been recently delivered, an open condition of the os is necessarily present and is a very valuable sign in cases where evidence of recent delivery is required for medico-legal purposes. Under such circumstances, also, the condition of the os uteri is in other respects peculiar. It is soft, flabby, and relaxed. The open condition of the os gradually diminishes after labor, so that after two or three weeks this sign is no longer useful: in cases where abortion has occurred, the open state of the os is less marked, and it is a less decisive test than when delivery has taken place at full term.* The subsequent *progressive closure* of the os is a valuable diagnostic sign in these cases. (See also Examination by the Sound.)

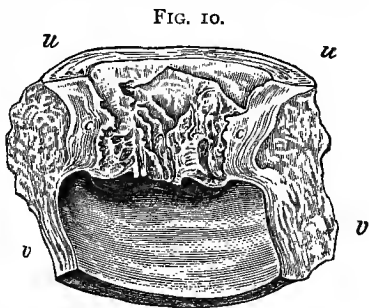
An open condition of the os is found, often to a marked extent, in cases where the uterus is enlarged from the presence of chronic congestion. In cases of leucorrhœa connected with an increased action of the numerous glands of the cervix uteri, the os is open more widely than usual. In cases of cancer of the uterus, the aperture is often much larger than it should be, and the first stage of this disease has in this respect a great similarity to other conditions of less serious import. But in cases of cancer of the os uteri, the opening has lost its symmetrical shape: there is, moreover, irregularity, of a kind to be particularly described presently.

On the other hand, the *opening of the os may be too small*, or altogether wanting. If there be any reason to suspect that either of these conditions be present, as in cases of sterility, dysmenorrhœa, etc., etc., it will be necessary to resort to another method of examination, and to use the uterine sound as a probe. (See Examination by Sound.)

* A most valuable chapter, On the Signs of Delivery, will be found in Montgomery's work, *jam cit.* p. 573.

Lacerations of the cervix owing to injury during parturition are recognizable by the touch.

LENGTH OF THE VAGINAL PORTION.—Variations in respect to the vaginal portion of the cervix are important from a diagnostic point of view. In *pregnancy* there is a diminution in the length of the vaginal portion, the nature and degree of which must be now explained. In the first place, it is a mistake to suppose that there is a perfect regularity in the degree to which the abbreviation of the vaginal portion proceeds at the same period of pregnancy in all instances; in the second place, it must be recollected that comparative, not positive, measurements only are to be relied on. In order that we may draw correct conclusions in particular cases, it is necessary to be aware of the normal length of the vaginal portion in the case before us; after repeated pregnancies, the portion of the cervix projecting into the vagina becomes shorter and shorter. Normally, the vaginal portion begins to be reduced in length about the fourth month of pregnancy, and as pregnancy advances the shortening also progresses, until at full term the whole, or very nearly the whole, of the vaginal portion has been drawn up out of the vagina. The length of the cervix itself is very little altered during pregnancy; the apparent shortening is due to drawing up of the cervix out of the vagina, which process has the effect of reducing the length of the vaginal portion.* Fig. 10, copied from Dr. Farre's drawing, shows the extent to which the abbreviation of the vaginal portion proceeds at the eighth month of pregnancy.



This shortening becomes useful as diagnostic of pregnancy when the patient is under observation for some months, and it can be ascertained from time to time that a *progressive* shortening is actually taking place. If the other signs present be not against pregnancy, this is one of the

* Dr. Matthews Duncan first forcibly drew attention to this important fact.

strongest proofs in its favor. Enlargement of the uterus and softening of the os uteri would, under such circumstances, be associated with it. The vaginal portion may be found *actually* shortened from several other causes—previous pregnancies, dislocation of uterus upward by ovarian tumors, distension of uterus by large polypus or by fluid, as in cases of hydrometra, also from dragging of the uterus upward by large fibrous tumors of the uterus. In cases of extra-uterine pregnancy the shortening is wanting. (Kiwisch.)

EXAMINATION OF THE UTERUS BY MEANS OF THE SOUND.

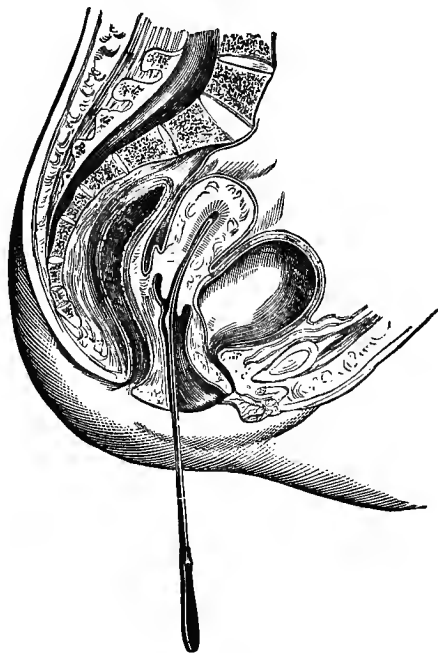
“It is possible,” says Sir James Y. Simpson, through whom, in this country at least, the use of the instrument became known, “by the use of a uterine sound or bougie introduced into the uterine cavity, to ascertain the exact position and direction of the body and fundus of that organ; to bring these higher parts of the uterus, in most instances, within the reach of tactile examination; and to ascertain various important circumstances regarding the os, cavity, lining membrane, and walls of the viscus.”

The sound itself is a slender rod of flexible metal, terminated by a slight knob at one end and by a flat handle at the other. It is graduated in inches, and at $2\frac{1}{2}$ inches from the bulbed end it is customary to place a slight projection. The instrument is very slightly curved at this point. The bulbed extremity has a diameter of one eighth of an inch. A second instrument provided with a much smaller bulbed extremity is sometimes useful.

This instrument must never be used without a previous digital examination, and there are circumstances under which the uterine sound is not to be used at all—that is to say, where there is the slightest reason for suspecting that the patient is pregnant. The introduction of the sound into the uterus under these circumstances would almost inevitably occasion miscarriage or abortion. In cases where the patient is the subject of amenorrhœa, this caution is particularly appropriate; for during the early months of pregnancy she is sometimes unaware of her condition, or desirous of concealing the fact when known to her. Under such circumstances the sign on which it is customary to place most reliance in deciding as to the propriety or not of using the sound is the presence or absence of *softness*

of the vaginal portion of the cervix and of the edges of the os uteri; and, where the softness in question is detected, to refrain from using, or at all events to postpone the use of, the instrument until the nature of the case is made more evident in other ways. As it must be admitted, however, that the presence or absence of this sign is by no means a positively sure criterion, unless perhaps in very experienced

FIG. II.*



hands, it will not be safe to rely exclusively upon it: it will be better in a case where there is the slightest doubt to be on the safe side.

Another caution is required. It is not so very uncommon for women to suffer from slight losses of blood at the beginning of pregnancy; such losses might be readily taken

* Fig. II represents the sound completely introduced, the position of the uterus normal.

to be evidence of menstruation, and the sound might in such cases be injuriously used.

It has occasionally happened that the sound has been introduced into the pregnant uterus, and no evil result has followed. It is thus shown that the instrument may pass into the decidual cavity between the decidua uterina and decidua reflexa without *necessarily* inducing abortion.

As a general rule, patients experience no inconvenience from the use of the sound, if it be carefully introduced; but in a few cases the passage of the instrument gives great pain, and its use should not then be persevered in.

Method of Introduction.—The patient is conveniently placed for the use of the sound, either lying on the left side close to the edge of a high couch or bed, or lying on the back; as a general rule, the former position is preferable. The forefinger of the right hand is first introduced into the vagina, and the tip of the finger brought into contact with the os uteri. The uterine sound, previously warmed and oiled, is then lightly grasped by the left hand, and the point of the instrument carried slowly toward the os uteri, the forefinger of the right hand being made use of as a director. If these directions be well attended to, the point of the instrument is readily made to hit the orifice through which it is desired to pass. When the point of the instrument is engaged in the os uteri, the first part of the operation is completed.

[The advocates of mechanical pathology and mechanical treatment of misplacements sometimes make the mistake of not using the speculum. I have seen cases that had been treated by pessaries for months, where there was eversion and erosion of the cervical membrane and other inflammatory conditions, that were speedily curable alone by a different and appropriate treatment. It is well to use every method for correct diagnosis.]

The passage of the sound through the canal of the cervix and into the cavity of the body of the uterus requires very careful management, and occasionally is only to be accomplished by those possessed of considerable dexterity. It is imperatively necessary to bear in mind that the introduction of the sound should be accomplished without using the smallest degree of force. Ordinarily, if the operator has introduced the sound in the proper direction, the curvature of the instrument and the curvature and direction of the canal being identical, the instrument is easily made to pass

upward until the knobbed extremity reaches the fundus uteri. Normally, the canal of the uterus passes at first upward in the direction of the pelvic axis,* but higher up there is a slight inclination forward. As a matter of practice I find it best to use a sound which is really almost straight, as represented in the figure. It is a great mistake to use an instrument sharply curved. If the uterus be of the average size, the instrument can be introduced $2\frac{1}{2}$ inches beyond the os uteri, and the projecting elevation on the convex side of the curve of the sound is felt by the forefinger to coincide with the os uteri. When the sound has been introduced a couple of inches, greater care is required in pushing it onward. It occasionally happens that the tissue of the uterus is diseased, and so soft that an instrument such as the uterine sound may be driven through the fundus by the exercise of very little force. The advisability of avoiding all risk of such an accident need not be enlarged upon.

The sound is sometimes used through the speculum. It is far preferable, however, to introduce the sound in the manner above described; I believe that there is far more risk of doing injury to the uterus when the sound is used in conjunction with the speculum. [Place the patient in the left lateral semiprone position (Sims), introduce the Sims speculum, then pull the cervix gently forward and hold it firmly with a small tenaculum, and the sound may be used with impunity.]

Supposing that an impediment is encountered to the introduction of the instrument, this may proceed from one of the following causes:

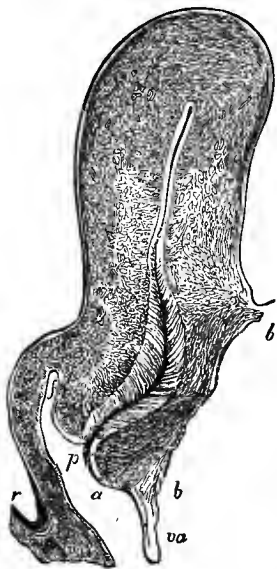
The Point of the Instrument is not directed in the Axis of the Canal.—This is the most common cause of difficulty, and it is one which is only to be got over by practice. It is often necessary to withdraw the instrument and bend it so as to give it a different curve. If the actual direction of the vagi-

* The question as to what is the normal direction of the uterine canal has excited much discussion. I believe that, as stated in the text, it is gently curved, the direction closely approaching that of a line passing successively through the axes of the brain and of the cavity of the pelvis. Dr. Meadows, who has written a careful criticism on the subject (*Lancet*, 1868, vol. ii. p. 71), believes that the canal is "straight throughout its course, its axis being identical with that of the pelvic brim or inlet." See further remarks in chapters on Flexions.

nal portion of the cervix be previously ascertained by digital examination, this difficulty is less likely to occur.

The Os is not pervious to the Instrument.—This is a cause of difficulty which is generally anticipated by digital examination, for the practiced touch easily recognizes the presence or absence of the depression and opening of the os uteri. In cases where the finger fails to find an aperture, it is necessary to have recourse to the speculum, in order to ascertain by actual inspection of the part whether a minute opening can be detected. The absence of an opening

FIG. 12.



is rare; such a condition is, in most instances, a congenital one, and the patient has never menstruated. In a few cases, however, the os becomes sealed up, no trace of its existence being observed, in women who have had children, and also, rarely, in women who have been subjected to operations the nature of which is such as to lead to contraction of the tissues around the os uteri.

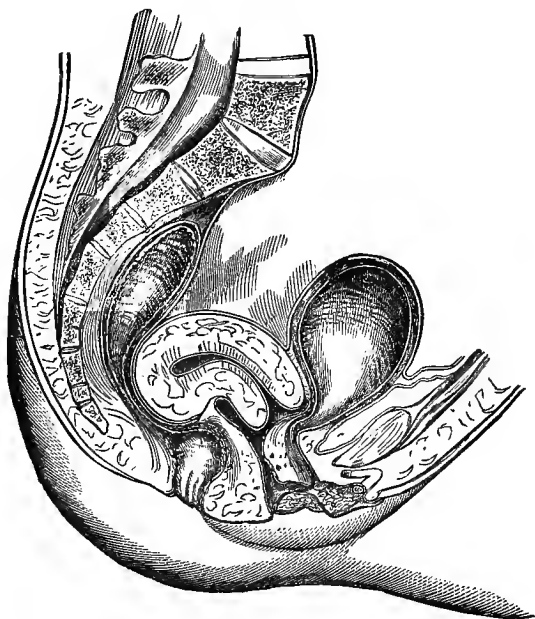
Contraction of the Canal of the Cervix.—When the instrument is engaged in the canal, its further passage may be prevented by contraction of the canal itself. It is not very common to meet with an obstruction to the passage of the instrument, from this cause at least, lower down than 1 inch or $1\frac{1}{2}$ inch from the os uteri, although the occasional existence of contraction at this point, congenital or acquired, is not to be denied.

The cavity of the cervix uteri is tolerably capacious, but at its superior termination—the *internal os*—the canal is ordinarily narrowed; and in the nulliparous uterus it is customary to find that when the instrument reaches the point of junction of the cavity of the cervix and the cavity of the body of the uterus, there is a slight resistance. The nature and kind of resistance here alluded to will be better understood by reference to Fig. 12, copied from an exceedingly accurate drawing by Dr. A. Farre. It represents a section

of the uterine cavity, and the extent and direction of the cervical canal. In women who have had children, however, this kind of difficulty no longer exists. Without exercising anything like forcible pressure, any ordinary resistance is readily got over. It requires care to discriminate between contraction and those other conditions which may impede the progress of the instrument, next to be alluded to.

The Point of the Instrument may become engaged in one of

FIG. 13.*



the Lacunæ or Depressions of the Cervix Uteri and its further progress arrested thereby. This is one of the most common causes of difficulty in introducing the uterine sound. By gently withdrawing the instrument and again introducing it, at the same time slightly altering the direction in which it is pointed, this difficulty will be readily overcome.

* Fig. 13 represents retroflexion of the uterus.

The point of the instrument may be arrested by the *existence of curvature or distortion of the canal of the uterus*. When the uterus is bent backward (retroflexion) or forward (anteflexion), the instrument is stopped abruptly at the seat of the flexure. When the resistance met with is due to retroflexion, a tumor may be felt behind the upper part and back of the vagina—the fundus uteri; and it is necessary, before introducing the sound, to turn it so that the concavity is directed not forward, but backward. With a little management, the sound then passes round the curved part of the uterine canal, and backward into the centre of the fundus uteri. In like manner, in the case of anteflexion, the obstacle to the introduction of the sound is to be removed by giving the instrument a sharper curve forward than usual, the concavity in this case being directed anteriorly or by pressing the handle backward. Further remarks on the subject of the use of the sound when the uterus is flexed will be found in the chapters on Flexions of the Uterus.

In cases when the sound does not readily pass, it is a good plan to use the speculum, to draw the anterior lip of the os down gently by means of a small tenaculum, and then to introduce the sound. The canal is thus drawn more nearly straight and the entry of the sound facilitated (see Fig. 15).

In the use of the sound we have, of course, a very complete and easy method of measuring the *length of the cavity* of the uterus. These variations are themselves signs of great value in the diagnosis of uterine disease; the deductions to be drawn therefrom are now to be pointed out. Professor Simpson has, in one of his original memoirs on the uterine sound, so fully considered this branch of the subject as to leave little to be added. I have chiefly followed the account given in the memoir in question. The usual length of the uterine canal from the os to the fundus is $2\frac{1}{2}$ inches, but a slight increase or a slight diminution of this measurement (*e.g.*, to the extent of $\frac{1}{4}$ inch) is very frequently observed, and quite consistently with the uterus being in a healthy state.

THE LENGTH OF THE UTERINE CANAL GREATER THAN USUAL.

This may be caused by any one of the following conditions:

Recent Delivery.—If the woman has had a child, the in-

creased length may be due to a persistence of the hypertrophy with which the uterus is affected in consequence of pregnancy. After delivery the uterine cavity measures from six to eight inches, and this measurement is found gradually to diminish, until after six or eight weeks it resumes, under ordinary circumstances, its previous size.

Longitudinal Hypertrophy of the Uterus is another condition of the organ in which the sound passes inward for a greater distance than usual. This species of hypertrophy occurs quite independently of pregnancy. For the most part the cervix of the uterus is the portion affected: this is lengthened out and extended, whereas the cavity of the body of the uterus remains nearly as usual, or participates but little in the change.

In many cases where the uterus is apparently prolapsed, the os uteri being very low down, this does not proceed from prolapsus of the whole organ, but from the presence of hypertrophy and elongation of the cervix alone, of that part of the cervix which is above the vagina. The sound, when used under these circumstances, is a most valuable means of diagnosis. In prolapsus constituted by hypertrophic elongation of the cervix, the sound can be made to pass upward for a much greater distance than usual. Sir James Simpson mentions cases in which it passed inward to a depth of four or five inches; and Huguier, whose observations are more recent and extensive, in an average of a large number of cases, found the length of the uterine canal to be $4\frac{3}{4}$ inches; in extreme cases, a length of 9 inches was attained. In cases which I have examined, with the object of testing Huguier's statements, I have found the length of the uterine canal to amount to as much as $6\frac{1}{2}$ and 7 inches. There is a fallacy connected with the use of the sound in these cases, with which it is well to be acquainted in order that an erroneous inference may not be drawn. The sound is sometimes arrested two inches or so from the os uteri, by the curve which the lengthened cervix uteri makes at this point, and in one instance I found it necessary to pass the finger into the rectum, when, by pressing against the convexity of the curve in question, the sound readily passed inward between two and three inches further. We have two categories: (*a*) those in which the *cervical* cavity is lengthened and at the same time prolapsed; and (*b*) those in which the *uterine and the cervical cavity* are both lengthened, the os uteri remaining at or about

its usual place, at the summit of the vaginal canal, or not remaining in this position. I have seen a case in which tumor of both ovaries was present, the upper part of the uterus was dragged up, and at the same time the lower part was pushed downward. The canal of the uterus had an excessive length. (See Prolapsus.)

Fibroid Tumors of the Uterus frequently occasion a considerable increase in the size of the cavity of the organ—a circumstance rendered evident by the use of the sound. The size of the tumor may, however, be considerable, and the size of the uterine cavity remain unaffected. The increase in the length of the uterine cavity due to the presence of fibroid tumor may reach to such an extent that the sound passes in to a depth of 6, 7, or 8 inches, a possible fallacy Sir J. Simpson calls attention to in connection with this subject. In long-standing cases it sometimes happens that the pressure produced by large fibroid tumors occasions the opposite sides of the uterine cavity to adhere, and the sound is arrested some distance below the real position of the fundus uteri.

The diagnosis between lengthening of the cavity caused by dragging of the fundus of the uterus upward, and that caused by the presence of fibroid tumor in the walls of the uterus, turns on the relation which is found between the sound while in the uterus, and the tumor occupying the pelvis and projecting upward in the hypogastric region. As a general rule, when an ovarian tumor is dragging the fundus uteri upward, and thereby lengthening its cavity, the sound is found to be anterior to the tumor. To this rule there may be occasional exceptions; and when the tumor is situated laterally in reference to the sound, this means of distinguishing between the two is not available. When the tumor dragging up the uterus is extra-uterine, one side and corner of the uterus is generally more drawn up than the other: this gives the course of the sound upward a certain obliquity, often characteristic.

Fibroid Polypus of the Uterus.—When the polypus remains within the cavity of the uterus, the length to which the sound can be introduced is increased in proportion to the size of the polypus. By means of the sound, a very perfect idea can sometimes be obtained of the relations and place of attachment of the polypus, for the point of the instrument can be made to travel round the included mass between it and the uterine walls. Care must be exercised not to

fall into the error of taking the pedicle of the polypus for the summit of the uterus; it is possible for the point of the sound to be arrested at this point when first introduced.

Hypertrophy of the Uterus.—The increased length of the uterine cavity may be due to hypertrophy of the organ, a condition which is now and then found to be present, unassociated with any of the conditions causing lengthening of the cavity hitherto described. The lengthening which occurs in connection with this condition is never very considerable in amount, the measurement not generally exceeding $3\frac{1}{4}$ to $3\frac{1}{2}$ inches. This hypertrophy and consequent lengthening of the canal may be due to long-continued congestive hypertrophy of the uterus, repeated miscarriages, or to defective involution persisting for a long time after delivery.

In *cancer of the fundus of the uterus*, the organ might be found unduly lengthened, without marked evidence of disease of the same kind at the cervix. In the very rare disease, *tubercle of the uterus*, elongation and increase in the size of the organ have been observed to be present.

Lastly, in cases of *undue patency of the Fallopian tube*, the sound may pass to an unusual length. It is always necessary to examine carefully into the previous history of the patient, and to compare the results of examination by the sound with those derived from examination of the hypogastric region of the abdomen, and it is advisable to come to no conclusion until a combined examination by the sound internally, and by the hand placed over the hypogastrium, has been performed.

THE UTERINE CANAL IS SHORTER THAN USUAL.

When the depth to which the sound can be introduced is less than usual, this may proceed, following Sir James Y. Simpson's classification, from one of the following causes:

Preternatural Shortness of the Organ generally, a congenital Condition.—This congenital shortness of the canal is met with where the uterus is imperfectly developed, the whole organ being smaller than usual, or in cases in which the organ is unequally developed on the two sides. The condition of the external generative organs may be apparently quite normal, and the sexual instinct present to the usual degree, and yet there may be imperfect or defective development of the uterus itself. The uterus may be double, or

one side only may be developed, or one side may be developed to a certain degree, and on the other side may be found a less fully developed cornu. These conditions are not frequently met with in practice,* but the possibility of their occurrence must be kept in view, or the results of examination by the sound might prove embarrassing.

Stricture of the Uterine Canal or Partial Obliteration due to Pressure of Tumors, etc.—The apparent shortening of the canal due to stricture has been already alluded to in speaking of the difficulties attending the introduction of the sound. In old people the internal os uteri, which is the point at which the stricture, when present, usually exists, is often obliterated (Mayer, Matthews Duncan). The cavity of the uterus proper—that is to say, the portion above the internal os uteri—may also be obliterated, and the sound is then arrested at the same point. When the canal is obliterated by *pressure*, as by large fibroid tumors growing in the walls of the uterus, shortening of the canal may be a consequence.

Partial Inversion of the Uterus.—The shortening due to partial inversion could not possibly be mistaken for that due either to stricture or imperfect development of the uterus. In partial inversion, there is a tumor projecting from the os uteri; the sound passes into the os uteri by the side of this tumor, but cannot be introduced so far as usual. Practical experience has shown that, in some cases, the diagnosis between partial inversion and polypus of the uterus is one of the extremest difficulty; but with the aid of the data obtainable by a careful use of the uterine sound, we may hope to surmount this difficulty. The important diagnostic fact is that the sound passes inward to a less depth than usual on *all sides* of the projecting mass. If the case be one of polypus, the sound passes inward to the usual extent, and the hand over the hypogastric region discovers the fundus of the uterus in its usual place. When polypus is *combined* with partial inversion the difficulty is greatly increased, and in such a case careful measurement of the depth of the cavity, examination of the tumor itself, examination *per rectum*, and of the hypogastric region, must all be brought to bear in forming a decision.

Atrophy of the Uterus is in rare instances observed after

* For further information on this subject the reader is referred to the work of Kessmaul, "Von dem Mangel, der Verkümmerng und Verdopplung der Gebärmutter." Würzburg, 1858.

labor; here also the cavity of the uterus is found to be shorter than natural.

Lastly, the caution may be repeated, that flexion of the canal, causing arrestment of the progress of the instrument, *may* be confounded with actual shortening.

EXAMINATION OF THE OS UTERI BY MEANS OF THE SPECULUM.

By the use of the instrument known as the "speculum," we are able to obtain ocular evidence of the condition of that part of the uterus which projects into the vagina, and of the orifice or os uteri.

The speculum should never be used without a previous digital examination. The digital examination will be the means of informing us whether the state of the parts be such as to render it unadvisable or impossible to use this instrument. Further, a knowledge of the size, length, etc., of the vagina, ascertained by means of a digital examination, is necessary in order that the instrument selected may be adapted to the peculiarities of the case. The use of the speculum is objectionable in the case of young unmarried women, especially in those in whom the hymen is intact. For purposes of diagnosis the use of the instrument can but rarely be considered necessary under such circumstances. In cases of cancer of the uterus the instrument should be used with great care: hæmorrhage of a serious character may be set up by careless employment of the speculum under these circumstances. [There is no such danger with the Sims speculum used properly.]

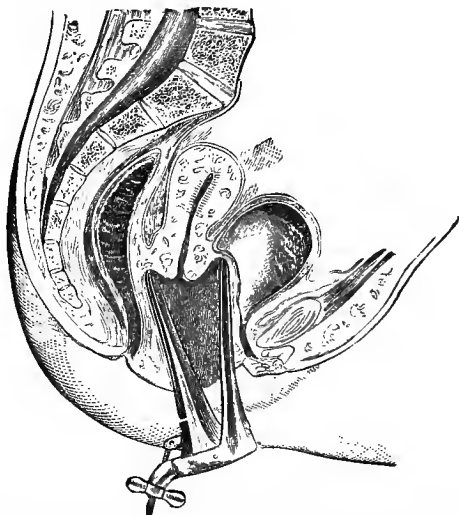
The cases in which the speculum is most commonly used for purposes of diagnosis are the following: Cases of obstinate leucorrhœa in which there is reason to suspect the presence of an abnormal condition of the cervix uteri and of the glands there situate; cases of menorrhagia, or recurring hæmorrhage, for the purpose of ascertaining the presence or absence of small polypoid growths within the os uteri, and which may be so small as not to be detected by digital examination; cases in which it is considered advisable to examine ocularly the condition of the portio vaginalis and os uteri, and thus of obtaining evidence as to the presence and nature of ulcerations, abrasions, excoriations, lacerations, etc., of the parts in question. It is employed in cases in which it is considered advisable to explore the interior of the uterus itself, to facilitate, in some

cases, the use of the uterine sound, and it is essential in the performance of some operations involving the cervix or os uteri.

Method of using the S eculum.—The mechanical contrivances for getting a view of the os uteri are very numerous. Simple tubes, tubes slit up into two or three segments, and lastly the duckbill univalve instrument—known as Marion Sims's—have been successively employed. It is needless to describe these various instruments in detail.

The two instruments which are, in my opinion, best

FIG. 14.



adapted for the purpose are a short bivalve instrument (a modification of Cusco's speculum) and Sims's speculum.

The modified Cusco's speculum I have used for some time, but the one I employ is large at the mouth, and very portable. Messrs. Weiss have improved the method of separating the blades, and it is now a very complete instrument (Figs. 14 and 16). It has the advantage of bringing the os uteri near to the ostium vaginæ, a most important point, and the aperture or mouth being large ($1\frac{1}{2}$ in. by $1\frac{3}{8}$ in.) great facilities for operations are offered. Its length is only four inches. It is kept in place by its own action and requires no assistant.

In using this instrument, the patient should be placed on the side with the knees drawn up, and the hips, a little higher than the thorax, should be quite at the edge of the examining couch. The speculum, previously oiled and warmed, is introduced in the collapsed shape, and care taken to direct it backward. The chief difficulty is at the ostium vaginæ, but this is overcome by drawing the fourchette a little back with the forefinger of the left hand, and inserting the speculum just at first a little obliquely as regards the plane of the aperture. It should be passed as far as possible before screwing the blades open, and when the screw has been turned about three times it should be ascertained whether the os uteri is in view. It frequently happens that the speculum has now to be directed a little more backward, in order that the os may be brought into view. The further separation of the blades is then effected. When the vagina is very long and narrow this speculum does not answer quite so well, but if the vaginal aperture be dilatable it is of great service, for in separating the blades the os is brought down into view by a mechanism which will be sufficiently obvious. In cases where the ostium vaginæ is very narrow, a smaller-sized instrument of the same kind would be required; but under such circumstances the use of the speculum is not often necessary. In withdrawing the instrument it is best to allow the blades to collapse to within half an inch of each other, so as to prevent the vaginal walls being caught between them.

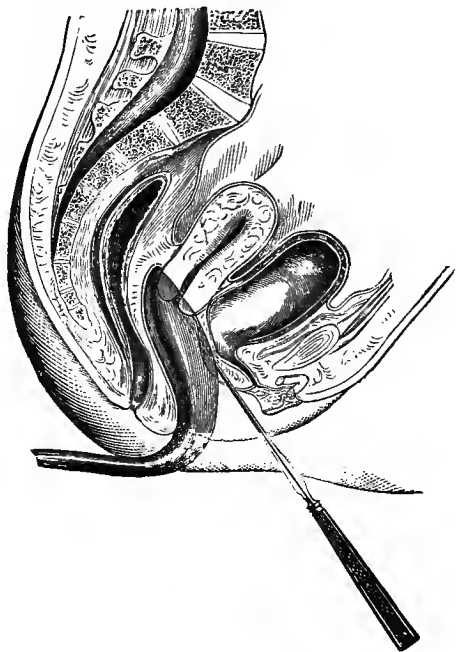
The drawing (Fig. 14) shows the position of the instrument when introduced and the blades separated to an average extent ($1\frac{1}{2}$ in.). It will be observed that a good deal of the length of the instrument is expended on the vulva. A great merit of this instrument is that it expands the vulvar part of the canal.

Dr. Meadows's speculum made by Mayer and Meltzer, somewhat resembles Cusco's, but two lateral additional blades are provided so as to separate the vaginal walls laterally. Further, the distal end is smaller, so that it is a little more easy of introduction than the one above described.

Another speculum is that of Dr. Marion Sims, and a most valuable one it is. It is kept in two sizes, giving thus the advantage of *four* blades, each of different width. This instrument requires the aid of an assistant. It is necessary to pay particular attention to the placing the patient in a

proper position. The patient must be placed as follows: Having been brought quite to the edge of the couch, which should be about the height of an ordinary table, she is laid on the side, and the knees drawn up to the abdomen. The left arm is then placed at full length behind the back. This throws the chest a little forward. I have found it best also to raise the hips by means of a thin hard pillow or other-

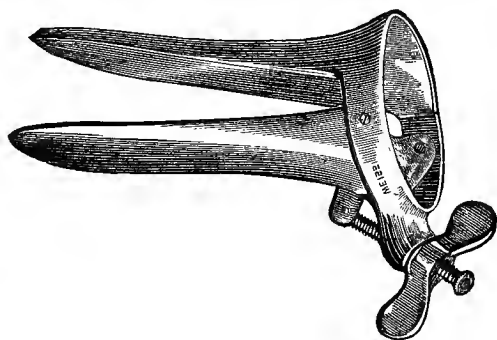
FIG. 15.



wise. The speculum is then introduced, care being taken to keep the point of the blade close to the posterior wall or floor of the vagina. The larger or smaller blade is used according to circumstances. When the blade is *in situ*, the instrument is pulled backward in such manner that the floor of the vagina is pressed against the rectum. The perinæum is thus stretched, and at one and the same moment the ostium vaginæ and the vaginal canal are dilated. The fundus of the uterus falls a little forward in conse-

quence of the position of the patient, and air of course enters the vagina. It is found that in some cases a perfect view is now given of the os uteri. In others the bladder and anterior vaginal wall project backward so as to impede the view, and when this happens the uterine sound or the finger must be used to push the projecting part aside, or, what is still better, a hook may be fixed into the anterior lip of the os and the uterus gently drawn down. Dr. Sims uses a small delicate tenaculum hook for this purpose. The one here figured (Fig. 15), and which I have been in the habit of using, is a little firmer and stronger, and more bent back. It will be found that in drawing down the uterus it is necessary simultaneously to draw the speculum a little in the same direction.

FIG. 16.



A self-retaining Sims speculum has been a good deal employed in America. By the use of this instrument the aid of an assistant can be dispensed with. Both Mr. Spencer Wells and Dr. Savage have also introduced instruments constructed on the same principle.

The view of the os and cervix uteri afforded by the Sims speculum is exceedingly good. Manipulations on the parts in question are effected with extreme facility. The use of the hook is not attended with any bad result, but when the patient is straining, as not unfrequently happens during the exhibition of anæsthetics, care is required not to lacerate the parts.

Fig. 15 represents the large blade *in situ*, as when first introduced. The hook having been inserted is drawn down

about an inch in the direction of the vulvar aperture, bringing the os uteri with it.

In some cases the bivalve instrument is better than the univalve; but where assistance is easily procurable the latter is very much to be preferred.

The bivalve instrument (Fig. 16—Cusco improved by Weiss), as above described, is so superior to the older bivalve instruments, that I do not describe them. The tubular glass speculum—known as Ferguson's speculum—is also very inferior to it. Neugebauer's is a bivalve speculum, the two blades being distinct and separate. Dr. Barnes ("Obstetrical Transactions," vol. xiv. p. 309) describes and delineates an improved form of this instrument.

In a few instances, as when the speculum is used to explore the condition of the vesico-vaginal septum in cases of fistulæ, it is advisable to place the patient on her hands and knees, so as to give the observer a good view of the roof of the vagina. The Sims speculum is the best to use in this class of cases.

The bivalve speculum may be used with the patient in the lithotomy position, but the other plan is far preferable. It is generally necessary, by means of a dossil of lint held at the extremity of a pair of long dressing forceps, to remove the secretions with which the surface of the exposed part is covered, in order that the mucous membrane itself may be inspected.

APPEARANCES AT THE OS UTERI OBSERVED BY THE SPECULUM.

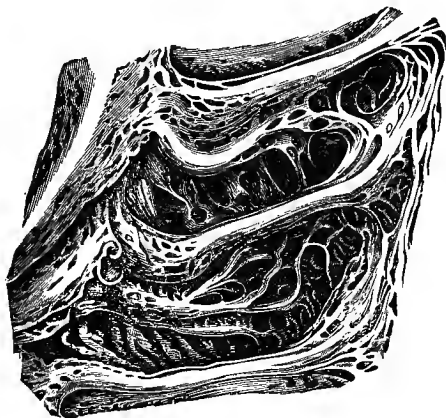
The "*os uteri*" is the lower opening of the canal of the cervix. It is a round opening, occasionally, however, transverse in shape, bounded by two "lips," an anterior and a posterior; the lips are smooth, uniform, and regular, when the woman has had no children, but the surface is more or less fissured, the os uteri being bounded by less regularly formed lips in women who have borne children. The virgin os uteri is, when normal, uniform, the vaginal portion regular and conical in shape; that of multiparæ is larger, irregular, and usually softer.

The appearances presented by the surface of the os uteri it is particularly important to bear in mind. The lips of the os uteri—that is to say, the surface of these lips—present an appearance very different from that which is observed in the *interior* of the os uteri, and under ordinary

circumstances the view obtained by the speculum is not simply that of the labia of the os, but of a portion of the interior of the cervix also, which has a tendency to be opened out by the action of the speculum. The surface of the interior of the cervix differs greatly in appearance from that presented by the surface of the labia, both in regard to the color and in other essential particulars, and there is an abrupt line of demarcation always evident and generally remarkably so, between the surface of the interior of the cervix and that of the labia of the os uteri.

The *lining of the cervix uteri*—the minute anatomy of

FIG. 17.*



which was first thoroughly described by Dr. Tyler Smith—is not smooth, but furrowed and plicated so as to present numerous depressions and elevations (Fig. 17), by which the amount of surface is very largely increased. The arrangement of the folds or plicæ varies in different cases. There are usually four prominent elevations longitudinally placed, and four columns of rugæ or folds of mucous membrane; and lateral transverse branches are given off from these, the whole thus acquiring a palmated aspect; and between these different elevations are seen others more minute, the whole surface thus presents a cribriform aspect.

* Fig. 17 is a magnified representation of the interior of the cervix uteri. (From Tyler Smith.)

The observer, under ordinary circumstances, sees the lower and a small portion only of the surface of the interior of the cervix.

Contrasting with the cribriform irregular surface just described, the labia of the os uteri present a smooth uniform mucous surface. The labia may themselves be lobulated, and thus irregular, but the surface itself is smooth and uniform. The epithelium covering the labia is of the squamous variety, identical with that lining the vagina, but *within the cervix* the epithelium changes, and the surface is covered by cylindrical epithelium. Higher up within the cervix, and therefore usually beyond observation by means of the speculum, the epithelium becomes ciliated.

The surface of the labia of the os uteri is covered by a somewhat thick layer of squamous epithelium, as already remarked. Beneath this epithelium is a fine basement membrane, and these two cover certain important structures—the *villi* or *papillæ*. These are long, single, or bifurcated, vascular bodies, sometimes so large as to be visible to the naked eye. They are rendered evident by macerating the cervix uteri in water, when, the epithelial covering becoming detached, the villi are seen forming an irregular fringe over the whole surface. *Within the cervix* there are also villi of a somewhat analogous character, but not bound down and hidden by epithelium as in the other position, and the villi are three or four times larger: they contain in both situations looped blood-vessels. The interior of the cervix further differs from the labia of the os uteri in being provided with an enormous number of mucous crypts capable of pouring out secretion in large quantity, whereas there appears to an almost entire absence of these glandular organs in the mucous membrane covering the labia.

Thus, if the whole of the epithelial covering were removed from the surface of the labia of the os uteri there would be presented to the eye a bright red, somewhat irregular, surface constituted by the free extremities of the villi in question. An appearance somewhat similar to this is normally presented in the cavity of the cervix by the villi there situate, but in the latter position the cervix is more irregular, due to the large size of the villi, and of a deeper red, owing to their greater vascularity.

EXAMINATION OF THE OVARIES.

In a state of health it is not easy to determine the outline

and position of the ovaries by means of the touch, in consequence of their position. Ordinarily there is sufficient space between the upper part of the vagina and the ovary to prevent the finger easily touching the ovary. In order to practice digital examination of the ovary, the patient should be placed on the side with the knees well drawn up, and the finger passed as high as possible in the vagina. The point of the finger may then be pushed in the direction the ovary is known to lie in until its presence is made evident. The resistance of the tissues is in a state of health considerable, and much pressure may be required to reach the surface of the ovary and define its outline. The ovoid shape of the ovary and its size, together with a certain degree of mobility, are the characteristics to be sought for. When the ovary is displaced from its proper position, or when it is enlarged, it is much more readily felt. On the other hand, when it is bound down by adhesions it may be difficult to recognize it.

In some cases a double examination is practicable, the fingers of the other hand being pressed downward from above through the brim of the pelvis. The success of this manœuvre depends on the abdominal muscles being lax and thin, and on the absence of a layer of fat in the parietes of the abdomen. In a few cases, by means of the double touch, as above described, the outline and size of the ovaries can be very accurately determined.

There are other objects liable to be met with on exercising a digital examination. In cases when the Fallopian tube is enlarged or dropsical the enlargement might be confounded with the ovary, or portions of the intestine descending into the Douglas pouch might possibly simulate the outline of the ovary.

CHAPTER IV.

SYMPTOMATOLOGY OF DISEASES OF THE UTERUS.

LIST OF SYMPTOMS OBSERVED.—Uterine Dyskinesia, its Importance and Frequency—Hysterical Symptoms—Cerebral Symptoms.

The method ordinarily pursued in describing the diseases of the female sexual organs is to arrange the subjects under various heads—some of these heads representing the diseases regarded from a pathological point of view, others

being merely names of symptoms. "Inflammation of the uterus" and "Leucorrhœa" may be given as specimens of this nosology—the first, pathological; the second, symptomatic.

The method of clinical observation I have pursued has made me acquainted with certain important omissions in regard to the symptomatology of uterine diseases. I have always adopted the practice of questioning patients particularly as to the sensations or pains or discomforts which they experience. These are found to constitute some of the more important of the symptoms presented by patients, and when due care is taken to put no leading questions, but to allow the patient to give her own reasons for obtaining medical advice, and in her own words, very valuable data can be obtained—data which when properly arranged are highly instructive and often capable of throwing great light on the diagnosis of the case. The following is a list of symptoms of all kinds which may be observed in connection with diseases or affections of the female sexual organs, these symptoms being placed as nearly as possible in their order of frequency. This list of symptoms I have on another occasion made the basis of a *clinical* discussion of the subject,* and I here reproduce it:

Pain (in the region of the uterus, or near it)—

1. Spontaneous.
2. Produced by motion (uterine dyskinesia).
3. Undue sensitiveness to the touch.

Leucorrhœa.

Dysmenorrhœa.

Menorrhagia.

Amenorrhœa.

If married—Sterility, abortions.

Various reflex phenomena:

1. Sickness or nausea.
2. Hysteria.
3. Convulsions.
4. Cephalalgia.
5. Melancholia.

Disturbance of functions of the bladder.

Disturbance of functions of the rectum.

Disturbance of sexual functions (dyspareunia).

* Harveian Lectures, "The Mechanical System of Uterine Pathology." Longmans, 1878.

A noticeable fact in connection with the symptomatology of uterine diseases with which my observations have made me acquainted is the remarkable frequency of a symptom which has attracted very little attention at the hands of writers on gynæcology, but which is so frequently present that I have come to regard it as very important. I refer to the symptoms standing second in the list just enumerated—viz., pain in the neighborhood of the uterus produced by motion. I have termed it *uterine dyskinesia*. By this is meant a painful sensation, or actual pain, or discomfort of any kind, and felt either at the back of the pelvis, or in front, or at the side, but always produced, or originated, or aggravated by some movement of the body by standing, or walking, or stooping, sometimes even by sitting. This uterine dyskinesia is really more commonly observed than almost any other symptom. I think it desirable to draw attention thus prominently to it, not only on account of its great frequency, but on account of the fact that it appears to be so important a symptom. Important for two reasons: firstly, because patients themselves so constantly allude to it, and desire to be relieved of it; and secondly, because it suggests at once the importance and preponderance, as causes of suffering and discomfort, of distortions, flexions, and changes of position of the uterus. The frequency of the symptom has led me to carefully investigate its source and origin, and with the result that I have been led to regard these distortions of the uterus as playing a part in the female economy second to no other in causing suffering, pain, discomfort, and chronic incapacity for work and various kinds of exertion. Although in a few cases the dyskinesia is traceable to disease of the ovary, in the very large proportion of cases it is the uterus which gives rise to the occurrence of the symptom in question.

Another symptom in the above list is undue sensitiveness of the uterus or parts adjacent to the touch. One class of cases is that in which the condition present is that termed by Dr. Gooch the "irritable uterus." These cases, as will be found fully set forth in later chapters, can be now satisfactorily explained and shown to be cases of acute flexion of the uterus accompanied with congestion, the extreme sensitiveness and tenderness being due to this congestion and distortion of the organ.

A series of symptoms often observed in women are the "hysterical symptoms" so called. In truth the relation of

the nervous system to the sexual organs in women is one requiring a separate and full consideration if there were time and opportunity for it. These so-called hysterical symptoms are deserving of a very attentive inquiry in view of the recent additions to our knowledge of the diseases of the sexual organs. The more rational and simple explanations which can now be given of various hitherto obscure symptoms liable to be observed in women will be found to extend themselves to the peculiar nervous manifestations hitherto described as "hysterical;" and for my own part I am quite convinced by the numerous carefully observed facts which have come under my notice, that many of these hysterical symptoms can no longer with any degree of exactness be regarded as "fanciful" and intangible and inexplicable, but that they will be found susceptible of a simple interpretation.

We may even go further than this. There appear to be very good grounds for the belief that some few at all events of the cases of "mental" disease, long regarded as calling only for the attention of the alienist physician, are really insanities produced by diseases of the sexual organs, susceptible of treatment and relief at the hands of the gynæcologist. This is a subject which has attracted some attention in the United States at the hands of Dr. Storer, Dr. Pallen, and others. Dr. Peaslee recently stated in a discussion at a medical meeting in New York that he had met with, in asylums for the insane, several cases of women where the cause proved to be curable ovarian or uterine disease.* In my own practice I have encountered cases of a like character.

CHAPTER V.

GENERAL PATHOLOGY OF THE UTERUS.

HISTORICAL SUMMARY.—The Mechanical System of Uterine Pathology—
Definition—Laceration of Cervix Uteri.

Many important points in relation to uterine pathology, which have been subjects of much dispute, are now in process of settlement. At least it may be said that some things may now be taken for granted which were violently

* "Amer. Jour. Obstet.," vol. x. pp. 206, 284.

contested some seven years ago. The force of opinion is at present on the side of what may be termed new views of uterine pathology, although there are not wanting authorities who are still content to travel on the old lines.

It may be necessary to recapitulate a little, but in setting forth what appears to be a just and proper representation of uterine pathology as it stands to-day, the main object will be rather to represent the present, and to endeavor to connect it with the future, than to go at any great length into historical reminiscences.

It appears probable, judging from hints and statements scattered through the writings of the older physicians, that the existence of displacements of the uterus have long been known—not merely the severe external displacements which could not of course have escaped recognition, but those less severe internal displacements only to be recognized by a skilled observer. But the fact remains that if the existence of these internal displacements were known, they were not properly and sufficiently described until comparatively recent times.

It is probable that knowledge in regard to the importance of these displacements would have made greater progress some years ago but for the fact that attention was drawn off from them by the advent of other pathological novelties. In the first place, the "inflammatory" theory was applied to the subject of uterine diseases, and little else was then thought of than accounting for the various discomforts and effects which they produce. In the next place, the discovery, or rediscovery, of the speculum played an important part in diverting attention from the subject of displacements. Attention was then concentrated on the appearances presented on inspection of the os and that part of the cervix uteri which could be exposed to view by its means. It is probable that in regard to advancement of the pathology of the uterus the speculum was as much a loss as a gain. The novelty of inspecting the os uteri and the work of classifying the various appearances there met with forthwith occupied almost the sole attention of the gynæcologist. Everything wrong in the feelings of the patient, every discomfort and incapacity, were set down to ulceration or inflammation of the os and adjacent portions of the cervix uteri. The use of the sight was thought all that was necessary, and the position, the shape and almost the very existence of the body of the uterus was ignored,

or at all events disregarded. The excessive and too exclusive use of the speculum after a time excited a reaction, but its influence is still apparent, and the evil effects of an exclusive employment of this method of observation are even now to be witnessed. [The advocates of exclusive mechanical treatment of uterine displacements sometimes make the mistake of not using the speculum.]

I have seen many cases that had been treated by pessaries for months without improvement, where there were eversion and erosion of the cervical membrane, and other inflammatory conditions which would have been detected if the speculum had been used, and which were readily cured by appropriate treatment. It is well to use every means for correct diagnosis.]

The too exclusive attention which the os and cervix uteri had arrogated to themselves, simply because it was so easy to inspect them by the eye aided by the speculum, was after a time shown to be erroneous by the influence of the writings of Scanzoni, who first insisted on the great importance of the body of the uterus, and who directed inquiry to this neglected part of the organ. At the same time the condition of the interior of the canal of the cervix uteri was made the object of attention by Tyler Smith. While, however, "inflammation" of the various parts of the uterus was occupying the attention of many observers, the displacements of the organ began to attract notice. At the very time when in France the ulceration and inflammation of the os uteri were by many regarded as of first-rate importance, Velpeau, in 1854, expressed himself to the effect that, according to his experience, the majority of women treated for other affections of the uterus have only displacements, and that nine out of ten such patients in whom the affection is diagnosed as inflammations are affected by displacements.

The late distinguished professor at Edinburgh, Sir J. Y. Simpson, contributed greatly to the increase of knowledge on the subject of displacements of the uterus. The invention of the uterine sound rendered the diagnosis of these displacements easy, and he was well acquainted with the grave importance of these lesions. His beneficial influence in extending knowledge on this subject would possibly have been greater but for the fact that an instrument he had invented for the treatment of one variety of displacement

proved to be dangerous to life in some cases where it was employed.

It is difficult to assign accurately to different workers in the field their proper share in the more modern advances which have been made in regard to the knowledge of displacements. Much has been done in the United States, much, particularly of late, in Germany, but most of all in England. It is strictly accurate to say that England and America share between them the chief merit: in America there has been a wider reception of some of the doctrines originated on this side of the water than in England itself. [Our author claims too much for England on the score of priority. The distinguished Professor Hodge of Philadelphia, the author of "Hodge's Pessary," and the no less distinguished Professor Meigs, of Jefferson Medical College, both antedate Professor Simpson and his followers by many years. And Dr. J. Marion Sims informs me that Professor Hodge was preceded by Dr. Jennings of Baltimore, who always accused Hodge of appropriating his ideas on the mechanical treatment of displacements of the uterus.]

In the last edition of this work, published in 1872, I endeavored to bring more precisely to a focus the conclusions which my own reading and careful observation had induced me to arrive at, and the exposition of the "Mechanical System of Uterine Pathology" therein contained was the result of this attempt.

The conclusion to which I had arrived in substance amounted to this, that the large majority of the discomforts, pains, and inconveniences complained of by patients and referred to the generative organs, can be traced to, and shown to be dependent upon, the presence of mechanical changes in the uterus, and to the effects of such mechanical changes. The distortions of the uterus, together with the displacements of the organ, more or less associated, are thus made responsible for such pains and discomforts and various other symptoms as make up, when put together, the greater part of the affections of the generative organs in women.

The conclusions seemed at first of so sweeping and general a character that I hesitated for some time to believe that such simplicity belonged to a subject which had always appeared so difficult; but as time went on, it was plain that there could be no mistake about it, and the more I saw, the

more exactly and truly did the principles in question seem to apply themselves naturally to observed fresh facts.

These conclusions were embodied in the three following propositions:

"1. Patients suffering from symptoms referable to the uterus are almost universally found to be affected with flexion or alteration in the shape of the uterus easily recognized, but varying in degree.

"2. The change in the form and shape of the uterus is frequently brought about in consequence of the tissues of the uterus being previously in a state of unusual softness [or what may be often correctly designated as chronic inflammation.]

"3. The flexion once produced is not only liable to perpetuate itself, so to speak, but continues to act incessantly as the cause of the chronic inflammation present." *

Since that time nothing has occurred to shake my confidence in the substantial truth of the conclusions just stated; I have had, on the contrary, more reason than ever to be satisfied of their accuracy. The part enclosed in brackets, and which refers to "inflammation" alone, requires to be altered, as I have now a more complete and satisfactory explanation to give of that condition alluded to as "softness."

There has been much misconception in reference to the word "mechanical," as used in the phrase "mechanical system of uterine pathology"—a misconception which it is necessary that I should at once deal with. The word mechanical is here employed to convey an idea as to the origin and nature of the disorder. By it is intended to be conveyed the importance of the share which acquired distortions and alterations of position of the uterus—in a word, mechanical changes—have in the production of uterine suffering. The word mechanical has, however, apparently led some who have criticised the doctrines which I have upheld, to imagine, quite unjustifiably, as I shall by and by show, that it has been my intention and desire to inaugurate the universal and indiscriminate employment of instruments and mechanical appliances in the treatment of uterine disease. Nothing can be farther from my object.

The principal argument employed by those who still resist the idea of accepting the mechanical system of uterine pathology is that, admitting the frequency with which al-

* See Third Edition of this work, p. 2. Longmans, 1872.

terations of the shape of the uterus occur, these alterations are never of any consequence unless associated with "chronic inflammation," or, as some prefer to term it, "congestion," of the uterus. They affirm that the patient suffers not from the flexion, but from certain accompanying conditions, and go even so far as to say that flexion by itself produces no symptoms.

The whole question will be discussed later on; here, however, it may be mentioned that the point really in dispute is the connection which exists between the flexion and the other condition (termed variously chronic inflammation, congestion, etc.). There is no dispute as to the importance of this "other condition." (In the three propositions above quoted, reference is specially made to it.) It is incumbent on those who controvert the mechanical theory to explain how and why it is that the uterus becomes affected with this "other condition," which they consider, and, from one point of view justly so, as so potent in producing suffering. No attempt has been made, so far as I am aware, to give this explanation. The only substantial criticism which has been made is to the effect that patients are relieved by treating the congestion alone, the distortion of the uterus being allowed to take its course. That relief to a certain extent is thus obtained is no doubt true. But this is no answer to the statement, demonstrable by clinical facts unlimited in number, that flexions are indubitably the principal cause of the congestion. Indeed, the congestion may often be at once removed by restoring the uterus to its proper shape. These subjects will of course be fully discussed later on.

The question as to the nature of this "other condition" so liable to be associated with flexions is of the greatest interest. It is one which has occupied my attention very particularly, and an intelligible account of it can, I think, be now given. In substance the explanation is:

1. The uterus is very liable to fall into a state of passive congestion when it has become distorted and bent upon itself, though it may become congested from other causes.
2. The uterus is very much more liable to become distorted when its tissues are in a soft, flaccid condition.
3. Softness and flaccidity of the uterus generally indicate malnutrition of the organ.
4. The so-called chronic "inflammation" is generally chronic congestion, the result of flexion of the uterus.

Attention has been lately attracted in the United States

to the effects of *laceration of the cervix uteri during labor* as a fertile source of various discomforts and serious changes in the uterus. Dr. Emmet, it appears, first practiced an operation for the relief of this condition in 1862, and he published a paper on the subject in 1874. Dr. Emmet gives a full account of his researches and numerous operations for its relief in his lately published large treatise. He states that Roser first described an ectropium of the cervix resulting from laceration. Dr. Emmet attaches very great importance to this lesion, and is of opinion that many of the recorded so-called cases of "ulceration" of the os uteri were really cases of this kind. There is no doubt that the subject is one deserving of careful and close attention. This lesion has been curiously overlooked, and much benefit will accrue from a fuller acquaintance with its nature and treatment. A more particular account of this subject will be found in a later chapter of this work.

CHAPTER VI.

ABNORMAL CONDITIONS OF THE TISSUES OF THE UTERUS— MALNUTRITION OF THE UTERUS—ABNORMAL SOFTNESS.

MALNUTRITION OF THE UTERUS OR ABNORMAL SOFTNESS.—Its true Pathological Nature—Evidence of Existence of General Malnutrition in such Cases—Effects in Predisposing to, or Causing Distortions of, the Uterus—Symptoms observed—Typical Cases.

Under the older nomenclature the terms "congestion" and "inflammation" were those mostly employed in describing changes in the uterus of a pathological character. These terms are no longer equally appropriate. "Congestion" of the uterus is a term which can still be employed, but "inflammation of the uterus" cannot be longer considered as an appropriate designation.

There are two conditions which appear to stand out prominently as subjects for particular discussion: (1) A condition of "undue softness" of the uterine tissues. (2) That condition of the tissues for which the term "congestion" is still appropriate. It seems proper to describe under these two heads the principal pathological changes in the uterine tissues.

ABNORMAL SOFTNESS OF THE UTERUS.

One of the results of long-continued observation of diseases of the uterus has been to make me acquainted with the fact that the uterus is frequently found in a condition of abnormal softness. This softness affects the tissues of the uterus universally. It is met with in various degrees of intensity in different cases. It is to be recognized by the touch. On digital examination in the ordinary manner it is found that the tissues of the os and cervix uteri have lost their natural healthy firm feel, and this alteration is usually traceable upward as far as the finger extends. The softness is sometimes so intense that the outline of the os uteri is difficult to recognize. The tissues of the cervix when so softened readily allow the finger to sink inward, having lost the normal firm resistant condition.

It is well known that during pregnancy the tissues of the os uteri become softened, and the softening, which can be readily recognized in women two or three months pregnant, becomes progressively intensified as pregnancy advances.

The softness of the os uteri now under discussion is not dependent on the presence of pregnancy, though physically there may be little to distinguish between the softness due to pregnancy and that observed in other cases. It is my object to point out that extreme degrees of softness may be observed in cases where no pregnancy exists.

Abnormal Softness of the Nulliparous Uterus.—Typically, the unusual softness now alluded to is met with in young women who are the subjects of great constitutional weakness, or who have been subjected to the influence of long-continued insufficiency of food. It may be encountered also in women who are married, or indeed in women who have had children, but for the purposes of analysis it is convenient to limit the consideration for the moment to softening of the uterus observed in young women, and apart from the influence or consequences of pregnancy.

In the typical uncomplicated cases there is no considerable increase in the bulk of the uterus; the organ is not necessarily enlarged thereby. The soft uterus is very liable to become swollen and therefore increased in size; but it is necessary carefully to separate the two conditions: (1) Simple softness; (2) Softness *plus* congestion.

The softness has long been familiar to me as a fact, and I was for a long time unable to account for it or to give a sat-

isfactory explanation of it. In the valuable work by Scanzoni, "Die Chronische Metritis," this author forcibly dilates upon the circumstance that the so-called chronic inflammatory changes in the uterus should be more correctly looked upon as chronic nutrition-disturbances. This remark was the hint to which I am indebted, I believe, for the explanation I have been since led to give of this abnormal softness of the uterus; for an extended observation of cases soon led me to the conclusion that this softness was so frequently associated with deficient nutritional activity of the body generally, that there could be little doubt that it was really an effect of such deficient nutrition; and the conclusion I was thus led to form was to the effect that this abnormal softness of the uterus observed in young women suffering from uterine symptoms was an evidence of the presence of malnutrition of the uterus.

This abnormal softness appears to be the result of what may be termed "chronic starvation," and the essence of it to be malnutrition of the uterus. The age of puberty is one of great growth and development. Much nutritive material is required to build up the frame and to provide for the great increase in bulk and in weight which the transition from the condition of the girl to that of the woman involves. The patients who present this softness and atonic condition of the uterus are almost invariably, according to my experience, to be convicted of non-observance of the laws of supply and demand. They are found to have either taken too little nourishing food, or to have largely and profusely expended their vital forces at this critical age, or to have erred in both particulars. From fourteen to seventeen years of age seems to be the time during which, for the most part, mischief is done in this way, and it is fortunate if errors of this kind do not leave their mark on the individual for the remainder of life.

The above are generalizations on the subject which have taken long to mature, and which are based on very numerous observations, including careful inquiry into the previous history, the mode of bringing up, and the various possible predisposing circumstances, of many patients who have been found to be affected with this nutritional disorder of the uterus.

This softness of the cervix of the uterus is recognizable by the touch. But the tissues of the body of the uterus are not open to investigation in the same way as those of the os

and cervix. Yet the clinical evidence adducible shows that the softness in such cases extends to the body of the uterus. This evidence consists in the fact that in these cases the uterus is found to possess a very abnormal degree of pliability. The softness is associated in fact with evidence of this abnormal pliability in the presence of flexions, or it is found by actual experiment that the organ does possess a very undue degree of pliability. This has a most important relation to the etiology of flexions, as will be pointed out later on.

In the worst cases that have come under my notice, the general health was almost invariably in a very weakened state. The patient had for a lengthened period eaten very little. The condition of the muscles generally, the absence of fat, the great languor, general debility, want of appetite, and other not less significant symptoms, showed that these patients were suffering from chronic starvation and that the tissues of the uterus were thereby weakened in common with those of the other organs of the body.

The weakening influences of an insufficient dietary show themselves in different ways in different cases. The resulting atrophy and weakness usually, however, affect more decidedly one organ in particular—in one case the lungs, in another the brain, and sometimes, as in the cases above described, the uterus.

The imperfectly nourished uterus is, I believe, always unduly soft. The softness is probably in great part due to actual deficiency of the muscular element in the tissues, but it may be partly due to defective nerve action, to impairment of the vaso-motor apparatus. There is a condition of the uterus to which it may be desirable to call attention in this place as bearing on the question as to the cause of the softness. When the uterus is gravid the tissues of the os and cervix during the early months of pregnancy possess a certain firmness and resistance, but if abortion occurs, as the process of evacuation of the contents of the uterus goes on, the lips of the os are observed to become very soft and lax to the touch. In fact the process of dilatation of the cervix—a part of the process of abortion—appears to be connected with a loosening and softening of the tissues of the cervix. There is of course no analogy between the two conditions: there is only a resemblance so far at least as the physical properties appreciable to the touch are concerned.

I am gratified to find that so experienced an observer as Dr. T. Gaillard Thomas indorses very completely the statements I have made as to the effect of chronic starvation in producing a soft condition of the uterus. In the fifth edition of his work (1880), Dr. Thomas says, "The form of the uterus—that is, its muscular strength and power of resistance—is decidedly affected by want of sufficient nutritional material, and flexions are a frequent consequence; as Dr. Graily Hewitt has ably pointed out (p. 51). . . . It is no exaggeration to maintain that the American woman, except in our cities, is at least half-starved" (p. 51).

As a matter of clinical experience, undue softness of the uterus is very frequently found *associated with true congestion* of the tissues of the uterus, but it is a quite distinct condition from the latter. It is very frequently also found associated with flexions of the uterus; one very remarkable class of cases is that in which the uterus readily, in consequence of its great softness, changes from one form of flexion to another. These latter are rare cases and will be found described in a later chapter as "alternating flexions."

Undue softness of the uterus would perhaps hardly be considered a disease in the ordinary sense of the word. And yet clinical experience would indicate that it is a powerful factor in the production of disease. As such it deserves careful consideration and adequate recognition.

The importance of the condition lies chiefly in this, that the uterus being thereby more pliable than usual is apt to become altered in regard to its shape, and this alteration of shape may become permanent after the condition of undue softness has disappeared.

Abnormal Softness following Pregnancy.—The foregoing remarks apply for the most part to the nulliparous uterus. Pregnancy is a condition which may leave behind it a degree of softness of a peculiar character. After the uterus has expelled its contents, it remains softer than usual for a variable time. During the process of involution it is probable that its tissues are softer than at other times. When the process of involution is a protracted one, the uterus may be found larger and unduly soft some time after the end of the pregnancy. Clinically this is a circumstance which is now and then observed. And a complex condition, made up partly of imperfection of contraction of the uterus and partly of undue congestion of the organ, is liable to be witnessed under such circumstances. Thus the uterus may

be found to be unduly large and unduly soft also. The facts observed in cases of this kind seem to leave very little doubt that we have before us a nutritional weakness as in the former class of cases. Here the disintegration of the uterus is slow; its reparation is slow also, and apparently from the same cause, viz., a deficient activity of the nutrition processes in the uterine tissues. This deficiency of action can be traced very frequently indeed to the insufficiency of diet and to want of proper food.

The symptoms observable in cases of undue softness of the uterus may next be considered. These symptoms present an interesting field for study. One of the most constant of these symptoms is presence of pain during locomotion, or a pain produced by movement of the body. There may be simply discomfort produced by movement. This symptom is one which I have particularly observed in its most intense degree when the softness is associated, as it very frequently is, with flexion of the uterus. This uterine dyskinesia appears in these cases to depend upon the unnatural flexibility of the organ; a slight motion of the body gives rise to a temporary flexion of the uterus, and this produces the pain. Another symptom very frequently present in cases of undue softness of the uterus is *sickness* or *nausea*. This symptom is one productive of great misery to the patient, and by its continuance is liable to lead to very great weakening of the system. It exists in all degrees. It is worst in cases where there is flexion also. The very worst cases I have seen were cases where the uterus was exceedingly soft and the flexion had been overlooked because it was of a temporary character. Nausea does not necessarily prove the presence of softness of the uterus, because it may be produced by flexion without concomitant softness. The most insidious form of this symptom is that where the nausea is slight in degree but very constantly present. There is a constant disinclination for food, though there may be no actual vomiting. The patient falls into the habit consequently of taking less food than is required; chronic starvation is the result.

At the meeting of the British Medical Association held at Manchester, 1877, I read a paper on "Abnormal softness of the uterus as a factor in the etiology of uterine distortions, and as a cause of impairment of locomotion."* In

* Published in *Brit. Med. Jour.*, Nov. 3, 1877.

that paper I gave particulars of twelve typical cases (nulliparous), and I here subjoin a few of them as illustrative of the history of such cases and of the nature and course of the symptoms observed.

Case I.—A governess, aged 20, had, when she first consulted me, been ill for over two years. The difficulty in walking, which had existed for longer than this, had finally become so great that she was almost paraplegic. There was great general feebleness. The amount of food taken daily was exceedingly small, on account of the nausea the idea of food produced. She had, after struggling to continue her avocation as a teacher, been obliged to give up entirely. Menstruation was painful and scanty. Great prostration invariably followed any effort. There were great emaciation, sleeplessness, and much mental depression. The uterus was soft to the touch, entirely wanting in that firmness the healthy uterus possesses; it was remarkably anteflexed. The treatment adopted was, firstly, very careful administration of soup, beef-tea, and small quantities of meat at frequent intervals; secondly, maintenance absolutely in the recumbent position; and, thirdly, reposition of the uterus by the aid of the sound, and continuous wearing of a rather small-sized cradle-pessary. In a month she removed to the country. Five months later, her condition was very markedly improved for the better. The pessary was continued, and the "rest" treatment, together with the careful feeding, persevered in. Iron in the shape of phosphate was ordered from the first. This patient was able to resume her occupation to a great degree when I next heard of her some months later, and has been steadily and certainly gaining ground, her ultimate complete cure being apparently certain. In this case, the initial element was, in my opinion, imperfect nutrition, whereby the tissues of the uterus were rendered soft, pliable, and atonic. The next important element was over-exertion, whereby the uterus was pushed downward and its shape altered. The anteflexion became more and more decided; the nausea prevented adequate consumption of food; and a third most important element was added, namely, starvation in a chronic form. [The use of the sound to rectify anteflexion is not customary with us; at least not among the followers of Dr. J. Marion Sims. He has always taught us to straighten up an anteverted or anteflexed uterus by manipulation alone (bi-manual). He passes the point of the left index

finger to the anterior vaginal *cul de sac*, resting it just against the anterior face of the cervix, and then pushes it up between the anteverted fundus and inner face of the pubic arch. This lifts up the cervix and throws the fundus backward, rotating the whole organ back on its transverse axis. Sustaining it immovably there by the left index, the fingers of the right hand are then pressed deeply down on the abdomen above the pubes, where they feel the anterior face of the uterus, and push it back in a line toward the promontory of the sacrum. The right hand then holds the fundus back while the left index is quickly changed from the anterior to the posterior portion of the cervix, moving it posteriorly even as high as the os internum, and lifting it up against the abdominal parietes. The left index holds the cervix firmly against the parietes, while the right hand pushes back the fundus, and thus the uterus is held between the two hands and moulded, straightened, and massaged as long as we please without pain or suffering.

The use of the sound in flexions, whether anterior or posterior, is often painful, always unnecessary, and sometimes positively injurious, and should be abandoned. The only use for the sound is as a probe. The Marion Sims method of rectifying retroversions will be given under the appropriate head.]

Case II.—The patient, aged 19, had been very ill for two years when I first saw her. A constant liability to vomiting was the principal symptom, this tendency being most marked on lying down. Four years ago she had an attack of fever, and has never been well since. She is extremely feeble, and any exertion is distressing. Formerly, she could walk three miles a day easily. The nausea set in rather suddenly; it is now present two or three days in a week, nausea or vomiting occurring the whole day long, but most intensely—and this is a curious feature in the case—on lying down in bed at night. Her appetite is pretty good. The uterus is found to be very sensitive to the touch and softer than usual; the body of the organ is enlarged. There did not appear at this time to be much anteversion present. The further observation of the case showed that the uterus was very unnaturally mobile, and that it was subject entirely to the action of gravity, the body of the uterus moving to an abnormal degree forward or backward, according to the position in which the patient lay. It was found most difficult to deal with this element in the case; for, while it

was evident that steadying the uterus produced an amelioration in the symptoms, this steadying of the organ was most difficult to maintain, owing to the great laxity and size of the vaginal canal. The uterus was too irritable to allow of a stem-pessary. The treatment was discontinued after a time, removal to the country for the benefit of a change of air being necessary; and the further history is not known to me. This patient was treated at the All Saints Institution, and Dr. John Williams also saw the patient several times. The attack of fever was the primary element in this case; the uterus was weakened thereby, in common with the body generally. The tonicity of the uterus was destroyed, and the nausea and vomiting were occasioned by the incessant bending of the uterus backward and forward which the motions of the body produced.

Case III.—The subject of this case was an American, about 20 years of age, who had been, to use her own expression, "ill all her life." For some years her health had been such that she could not enter into society or visit, or walk more than a few yards without extreme inconvenience. The first occasion of the illness appears to have been dancing during a catamenial period. Menstruation is now very irregular, the interval being sometimes as much as three months. Nausea is very commonly present. There is a very troublesome leucorrhœa. Of late, menstruation has become painful. There is a high degree of "nervousness," and this has much increased of late. There is constant pain in the back, and frequently pain in the groins. The uterus is congested, softened, anteverted, and so low down in the pelvis that the fundus of the organ is felt through the vaginal roof almost immediately on introducing the finger. The sound does not enter easily. The treatment consisted in rest; use of the sound, by which the uterus was gradually elevated; and constant wearing of a cradle-pessary. After two months' treatment the patient left, and was found, at the end of six months, so much better that she was considered to be practically cured. The use of the pessary was continued in all about eight months. Locomotion was easy and natural, and the result extremely satisfactory. In this case, over-exertion in dancing at the menstrual period gave rise to anteversion and descent of the uterus. The symptoms were produced by this unnatural position of the organ; and the congestion, also a very important element in the case, ap-

peared to be kept up by this position. Very little was done except to replace the uterus and to maintain it in its place; but the symptoms, so long continued and intractable, were by these measures subdued, and the natural activity of body restored.

Case IV.—The patient was single, aged 23. The illness, in its present form, has lasted six months. Menstruation was irregular from the first, the interval being occasionally six months. Latterly, the periods have been regular; but since four years ago, at which time she injured herself by a leap, the periods have been painful. The patient is now unable to sit upright, and she can only walk a few minutes without suffering. She had previously been active. There is a constant pain in the back. The uterus was found to be soft, congested, and anteverted; introduction of sound painful. The treatment at first consisted in dorsal decubency and occasional use of the sound. Later on, a cradle-pessary was used, and the patient went to the country. Complete restoration to health was the result, the power of walking gradually returning. In this case, the general health was not much impaired. The case was a well-marked instance of displacement of the uterus occurring suddenly and rendered chronic. The morbid condition had latterly become aggravated, and the power of locomotion destroyed.

Case V.—In this case, the patient, who had formerly been able to walk for as much as two hours at a time, was single, aged 27. Catamenia formerly very irregular. Walking is productive of great uneasiness and pain; a bearing-down sensation always follows. There is frequent nausea on sitting up the first thing in the morning. It is evident that the chief illness dates from a period of three years ago, when the patient injured herself in drawing a cork from a bottle. This gave great pain at the time, which continued to be felt in the side for some weeks afterward. There is leucorrhœa, occurring in the form of occasional gushes of fluid, evidently from the cavity of the uterus. The uterus is half an inch too long, anteverted; but the sound passes in easily, and reduction is easy. The organ is soft and pliable. The general health is bad; there is great feebleness. The general treatment ordered was restorative; rest was enjoined, and the uterus supported anteriorly by means of the cradle-pessary. In satisfactorily effecting this latter object, great difficulty was experienced, owing to the ab-

normal length of the uterus. A certain degree of improvement for a time followed such treatment as I was able to carry out, only seeing the patient once at intervals of a few months. The general nutrition of the body had received a shock, which was difficult to withstand; and the patient has not yet recovered from the extremely feeble condition to which she had been reduced. This case is a most important one, as exemplifying the occasional severe form which uterine disease may assume. The general health had become so much affected that little or no restorative power was at command, while the peculiar mechanical difficulties of the case also conspired to interfere with the efficiency of the treatment. [The final result of this case was restoration of locomotion and to fairly perfect general health.]

The subject of treatment will be discussed in connection with the treatment of congestion of the uterus.

CHAPTER VII.

CONGESTION OF THE UTERUS AND CONGESTIVE HYPERTROPHY.

PECULIARITIES OF THE CIRCULATION IN THE UTERUS.—Effect of Compression at the Centre of the Uterus in Producing Congestion at its Two Extremities—General Congestion: Causes—Acute and Chronic Varieties—Relation of Acute Form to Gooch's "Irritable Uterus"—Effect of Flexions in Causing Acute Congestion—Chronic Congestion: Causes and Effects—Increase in Size of Uterus—Association of Chronic Congestion with Flexions.

Congestion of the uterus implies a fulness and distension of the blood-vessels of the organ, which may be slight in degree or considerable. The congestion may be partial, affecting some portions of the organ more than others, or it may affect the whole organ. The congestion may be temporary and evanescent, or it may be continuous and persistent.

Congestion of the uterus may also be simple or complicated. When it has assumed a chronic form it is almost always complicated, the tissues of the uterus becoming altered in other ways also.

In discussing this important question it is necessary to direct attention to the peculiarities of the circulation of the uterus; these peculiarities having a direct bearing on the nature and etiology of uterine congestion.

The vessels of the uterus enter for the most part along the sides of the organ. The *arteries* are derived from the uterine artery, which passes upward from below, along the sides of the uterus, giving off very numerous branches which pass inward to the uterus, and the greater number of them about the situation of the internal os uteri. These branches of the uterine artery are mainly concerned in giving arterial blood to the uterus, but not entirely so, for

FIG. 18.



there is a free inosculation at the junction of the Fallopian tube and the fundus uteri, between the extremity of the uterine artery and that branch of the spermatic artery which supplies the Fallopian tube itself. Were it not for this inosculation, which is effected, however, through a vessel small in calibre, cutting off the circulation in the uterine arteries would deprive the body of the uterus of blood.* The *veins* issue from the sides of the uterus, forming large plexuses around the organ. It follows from these considerations that compression of the uterus about its middle, such as would be produced for instance by applying a ligature round it at that situation, would, according to the degree of tightness of the ligature, obstruct the circulation in the part of the uterus near the middle, viz., the body of the uterus. It is evident also that if the constricting ligature were widened so as to compress also the vessels a little above and a little below the middle of the organ, there would arise an obstruction to the circulation, both in the body and in the cervix of the uterus. The uterus is liable to a form of compression which acts more or less exactly as an artificial compress might be made to act, when it is bent upon itself and thrown into a state of flexion. It

* The arteries of the uterus are well delineated in Plate 5 of Dr. Savage's work, 2d ed.

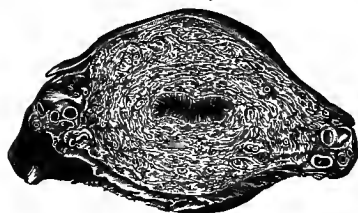
is true that the vessels are outside of the uterus, and it may be conceded that the bending of the uterus itself may leave the main trunks still patent as ever, but the moment they enter the tissues of the organ they inevitably fall under the effect of compression. A disturbance in the circulation in the body of the uterus thus results—a disturbance which the small anastomotic branch connecting the spermatic and uterine arteries cannot adequately rectify.

The veins going from the fundus uteri to the ovarian bulb appear to be entirely insufficient to relieve congestion of the body of the uterus produced by impediment to the circulation existing at the centre of the uterus. Indeed if the outlet toward the ovaries were sufficient, congestion of the body of the uterus would not occur. That it does occur shows the insufficiency of the ovarian outlet as a means of emptying the veins of the body of the uterus.

The accompanying drawing (Fig. 18, from Dr. A. Farre) represents a section of the uterus, and exhibits the thickness of the uterine walls.

A second figure (Fig. 19, also from Dr. Farre) exhibits a

FIG. 19.



transverse section of the uterus at the situation of the internal os, and the section of the uterine vessels as they lie at the sides of the uterus is very well shown.

With these two figures before us it is easy to understand what happens when

the uterus comes to be acutely bent. The next drawing (Fig. 20) represents the condition present in ante flexion of the uterus, and the effects of the flexion in compressing the uterine tissues at the concave side of the bend. The walls of the uterus are also drawn thicker, and the dark shading is intended to show the congestion which results in the whole of the upper part of the uterus from the compression of the vessels, and also at the os uteri and cervix, below the part where the compression is exercised.

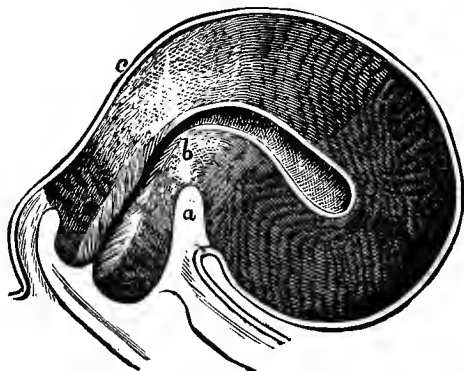
General congestion of the uterus will be first described.

Here the whole organ is too full of blood, and as one result it becomes larger and heavier than usual. It seems certain that a condition which may be termed a normal general congestion exists at the time of menstruation, and

that, as Rouget first pointed out, there is as a result a quasi-erection of the whole organ at this period. It would be proper to use the term "menstrual congestion" to designate this condition, which simply implies that at the time of menstruation there is a certain amount of congestion and fulness of the vessels of the uterus. In health this degree of congestion is probably slight, but doubtless in disease it is capable of easily extending itself, so to speak, and thus the congestion may be extensive both in degree and in duration.

General congestion of the uterus may arise from general impairment of the circulation, especially such as produces

FIG. 20.

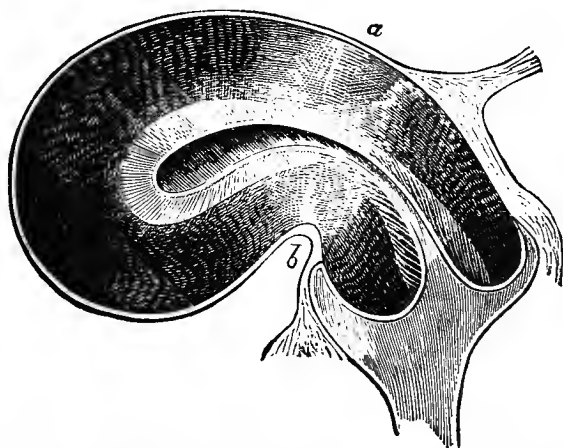


interference with the abdominal viscera. One of the commonest varieties of it, for instance, is that met with in European women living in India. General diseases, of whatever kind, capable of lowering the force of the heart's action may lead to general congestion of the uterus; a loaded condition of the bowels; mechanical pressure of abdominal tumors; excessive sexual indulgence,—are some of the other more important determining causes.

General congestion of the uterus may be *acute* or *chronic*. In the acute form it is rare unless associated with an actual mechanical disturbance in the organ itself, as, for instance, in cases of acute retroflexion; but there is one class of cases in which probably what may be termed acute general congestion of the uterus occurs, viz., those cases in which the patient, while menstruating, or just before, or just after the period, receives a violent chill from sitting in a cold

bath, bathing in the sea, standing on a wet floor, etc., and there results a severe and general congestion of the whole uterus. It is true that in some of these cases of sudden chill or shock the mischief produced thereby may not be always precisely the one here indicated. Acute general congestion of the uterus, however, produced in this way, is a very serious affair, and though not perhaps always immediately productive of grave results it may leave behind it a permanent and troublesome disease. It does not

FIG. 21.*



appear that such acute attacks are common except at or near menstrual periods.

The most important class of cases of *acute congestion* of the uterus is that in which the uterus is distorted and its shape altered, and there arises in connection with this an acute congestion of the uterus, which affects, according to circumstances, some parts of the organ more than others. It is met with in association with retroflexion in its most severe form, but ante flexion is sometimes conjoined with very acute congestion.

The class of cases now alluded to comprises those which were formerly described by Dr. Gooch, under the term

* Fig. 21 represents acute "traumatic" congestion in a case of retroflexion.

"irritable uterus." It is now some years since I published a paper on this subject, the object of which was to point out what I considered to be the true pathology of these cases. The subject will have to be alluded to in the chapter on Flexions. Here it may be sufficient to say that acute flexions are liable to be attended with very acute congestion of the uterus. The organ becomes swollen, hard, excessively tender to the touch—so much so that the patient cannot bear even the idea of an examination being made. The body of the uterus, which can be felt by the finger either in front or behind the cervix, according to the kind of flexion present, is the most abnormally sensitive. The os uteri and cervix participate more or less in the congestion present, and they may be found swollen and enlarged also. The whole uterus is of course in a state of the greatest irritation under such circumstances. The irritation persists along with the congestion. The congestion may be very protracted if the condition is unrelieved by treatment, but it may rapidly pass away if judiciously managed. The phenomena observed under these circumstances convey the most valuable information in regard to the potency of flexions in causing congestion of the uterus, and in maintaining it. The contrast offered by the former complete want of success in remedying these troublesome cases, and the present rapidly successful treatment is the best proof that could be offered of the accuracy of the above pathology. The congestion appears to be acute in proportion to the degree of bending which the uterus undergoes. Here we have the application to make of our knowledge of the peculiarity of the circulation in the uterus spoken of at p. 111. The intense swelling of the body of the uterus produced by the compression of the flexion is sometimes so severe as to justify the use of the term "strangulation of the uterus," to which I called attention some years ago.* It is quite analogous to the congestion of the hand and forearm which is produced when the fillet is tied round the arm for the operation of venesection. The blood is detained in the vessels, particularly the capillaries and veins, and congestion thus arises. And it is the fact that the removal of the compression, which can be effected more or less quickly by straightening the uterus, has the effect of relieving the congestion in a manner strikingly speedy and satisfactory.

* Brit. Med. Assoc. Meeting at Newcastle-on-Tyne.

The fact that flexions are thus capable of determining and causing severe congestion of the uterus is a radical one in regard to its importance: it is one which has been noticed by Klob: Thomas fully endorses it in his edition of 1873. It will be found to have a wide application in gynæcological practice. Probably the best term to use to designate congestion of the uterus produced in this way is "traumatic congestion." Dr. John Williams,* in an interesting paper on "The Relation between Congestion of the Uterus and Flexion of the Organ," points out that when the uterus is retroflexed, the fundus is liable to be caught and constricted by the utero-sacral ligaments, and that under such circumstances there would arise a further mechanical cause of congestion.

Acute congestion of the uterus may produce a very great increase in its size. Thus in some cases of flexion I have found the uterus almost as large as the fist, and it may attain this size in a comparatively short space of time. The following is a case of this kind which came under my notice quite recently:

Miss —, æt. 19, has always been weak and delicate. Of late she has been incapable of walking, and during the last few weeks has suffered from severe pains in the hypogastric region, with difficulty and frequency of micturition. On examination it was found that there was apparently a large tumor, smooth and hard, occupying the pelvis, pushing down the vaginal roof in front of the uterus, of which it seemed a part. The size of this was so great that I thought it was really a tumor, and a more complete examination under anæsthæsia was evidently necessary. Meanwhile the patient was ordered to lie down and keep quiet. After the lapse of a week further examination was made. It was then found that the supposed tumor had almost disappeared; it had resolved itself into a moderately large anteфлекed uterus. The rest and recumbent position had produced this effect. Any one making an examination on the first occasion would have been entirely unprepared to find in a few days such a change in the size of the uterus as undoubtedly occurred in this case.

Chronic congestion of the uterus must next be considered.

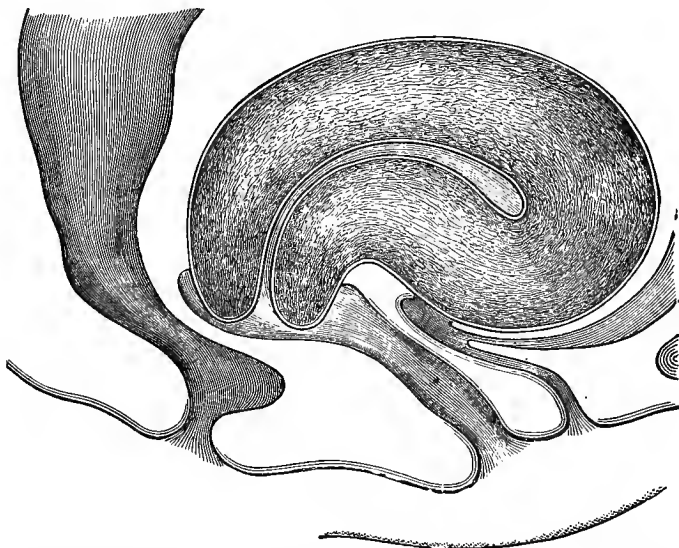
In its first stage chronic congestion is little more than a

* "Obst. Trans.," vol. xvi., p. 203.

slight engorgement of the uterine vessels, with increase in its weight. There is at first nothing beyond increase in the size and fulness of these vessels, without any particular molecular change in the tissues of the uterus.

When present in a slight degree, general congestion of the uterus at first may produce a certain degree of softness of the tissues of the uterus, the organ becoming enlarged and looser than usual in texture. In other cases, on the other hand, it becomes firmer than ordinary. The differ-

FIG. 22.*

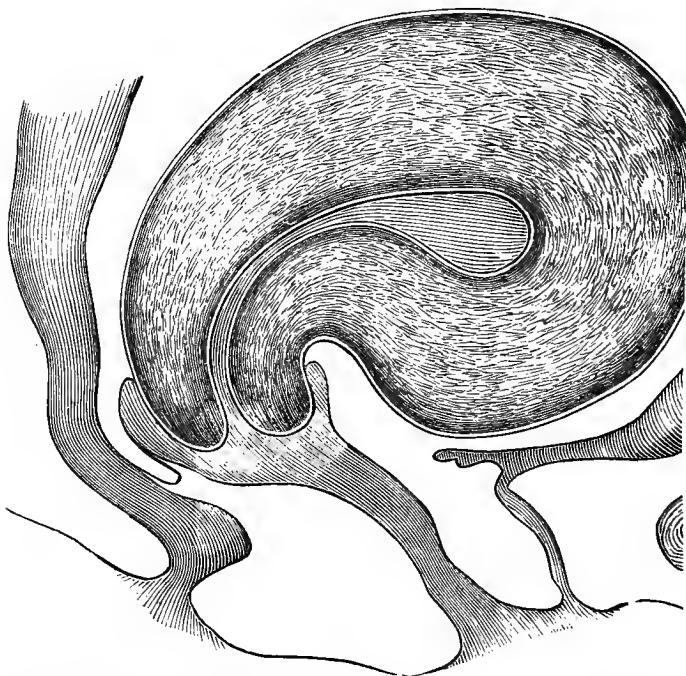


ence seems to be explainable by attention to the condition of the uterus which existed before the congestion set in. Thus, in cases of undue softness arising from malnutrition of the uterus nothing is more common than to find that congestion is added to, or affects the already soft uterus. A large, flabby, unresisting condition of the uterine tissues will then result. But in the case of a uterus in a state of health previously, the addition of congestion will produce

* Fig. 22 shows congestion and enlargement, with anteversion, in a patient, æt. 18, affected for nearly one year with severe vomiting.

a different effect ; the tissues of the organ will then by continual congestion be made harder and firmer than they were before. There are certainly these two types of cases observable in practice. Another precedent or concomitant condition which may be taken into account is defective involution of the uterus after delivery or after abortion. Here the organ is large and heavy, and the condition is one

FIG. 23.*



of continuous general congestion, because the vessels are large and the uterine solid constituents of undue bulk. Defective involution of the uterus is thus one of the causes of chronic general congestion of the organ, and there are good reasons for the belief that the sluggish manner in which the uterus involutes itself is due to general impair-

* Fig. 23 shows chronic congestive hypertrophy, with anteversion of the uterus of many years' standing.

ment of the nutritive processes in the body generally, and in the uterus in particular.

CONGESTIVE HYPERTROPHY.

A common effect of general chronic congestion of the uterus is an *increase of the solid constituents of the uterus*. At first there is simply undue fulness of the blood-vessels, but after a time there is addition to the solid parts. The addition consists in increased growth. The result is, that the organ as a whole is larger, heavier, and thicker than before. The tissues of the uterus consist of unstriped muscular fibre and fibre cells, and intervening cellular tissue. These, together with the vessels, nerves, and lymphatics, compose the uterus. In chronic general congestion the connective tissue appears to undergo after a time decided increase in quantity. The increase in bulk is in all probability due in part also to the further growth of the muscular element, but the general impression is that the cellular tissue is most affected. The uterus becomes after a time harder than the normal uterus. It is thus both larger and harder than before attacked by chronic congestion. And when a section of it is made, the tissues are seen to be decidedly hard and to resist the knife. This condition of the uterus has been described as "chronic inflammation," "chronic metritis," etc. Professor Thomas of New York terms it "areolar hyperplasia." Klob describes it as "continual hyperæmia." The term which appears to me most correctly to define the condition in question is "congestive hypertrophy."

The increase in bulk and the consequent hardness resulting in the production of the condition now described as congestive hypertrophy, is a further stage of general congestion of the uterus.

Chronic congestive hypertrophy of the uterus is a very common affection. It is not, however, very common unassociated with alteration of shape of the organ. It is liable to be *partial*, involving one part of the uterus more than another. A common variety of it is the uterus distorted by a flexion of long standing, the fundus in a state of congestive hypertrophy, the lips of the os uteri swollen and also in a state of congestive hypertrophy, but generally one lip more decidedly swollen than the other. Such a uterus is liable to take on at any time a *further* congestive action—

there occur, in fact, repeated attacks of congestion, as it is termed, the repetition of which attacks has the effect of increasing gradually the size of the organ. The uterus becomes moulded and swells in the direction of least resistance, and becomes literally hardened in its evil ways. This is a common type.

A really general congestive hypertrophy of the uterus, the uterus still retaining its normal shape, is not common; but such a condition sometimes results from defective involution of the uterus.

Chronic congestive hypertrophy of the uterus is not easy to distinguish from defective involution of the uterus after delivery. Microscopically, however, there would probably be a difference, the muscular element predominating in the latter case, and the connective tissue element in the former.

The hypertrophic condition of the uterus, as already remarked, is very frequently noted in cases of flexion or distortion of the uterus; and by some authorities (Dr. Thomas of New York, *e.g.*) the hypertrophy is looked upon as the cause of the displacement. Undoubtedly this explanation applies to that variety of hypertrophy, the result of defective involution after delivery, but it is probably not generally the case in other instances.

The size which the uterus attains in cases of chronic congestive hypertrophy is sometimes very great. Thus, I have met with cases of ante flexion in which the uterus was so wide from side to side that it seemed almost to fill the anterior half of the pelvis, having the size of a cricket-ball, or even larger. Fig. 23 represents a case of long-standing general hypertrophy of the uterus, associated with ante flexion. Hypertrophy, to an equal extent, is not often witnessed with retro flexion.

Chronic hypertrophy often affects the lips of the cervix uteri; the os uteri is then surrounded with tissues sometimes enormously thickened. This hypertrophy of the vaginal portion of the cervix may be associated with flexion of the uterus or may be the result of a former flexion. It may also be produced by laceration of the cervix. It seems to me very probable that many of those cases in which the os uteri presents rounded projecting lips of considerable size have their origin in such laceration. At all events it is certain that such rounded hypertrophy of the lips of the os uteri is observed in cases of lacerated cervix.

The congestive hypertrophy in these cases appears to depend on the interference with the circulation in the tissues produced by the laceration, for I have seen it rapidly disappear when the laceration has been repaired and the normal circulation restored.

CHAPTER VIII.

SUB-INVOLUTION OF THE UTERUS—ATROPHY AND HYPERTROPHY OF THE UTERUS.

SUB-INVOLUTION OF THE UTERUS.—Nature and Treatment.

ATROPHY OF THE UTERUS; the result of Sexual Involution—Premature Senile Atrophy or "Super-involution" of the Uterus—Mechanical Atrophy.

HYPERTROPHY OF THE UTERUS.—Result often of Defective Involution after Delivery—Hypertrophy, with Elongation of the Cervix.

SUB-INVOLUTION OF THE UTERUS—NATURE AND TREATMENT.

The condition of the uterus described under the term sub-involution has been already incidentally alluded to. But it is convenient to give it a distinct and separate consideration, inasmuch as it is a factor of considerable importance in many cases of uterine disease.

Sub-involution of the uterus may be observed after parturition at full term or following an abortion. The uterus does not return to its proper size, but remains larger than it should be. That is to say, that process of diminution in bulk which is natural under such circumstances is delayed beyond the proper time. The uterus may be found, for instance, as large at the end of a month after parturition as it should be at the end of a week from the time of labor. The persistence of a bulky condition of the uterus under these circumstances means either that the metamorphosis of the large uterine muscular fibres into fatty material, and absorption thereof, is delayed, or it means that there is a delay in the metamorphosis *together with* congestion of the uterus. It is probable when a few weeks have elapsed and the uterine bulk is still considerable, that the case is one of arrested metamorphosis *plus* considerable congestion, rather than arrested metamorphosis alone.

At first the uterus, in a state of sub-involution, may be soft and spongy to the touch, but later on it is not so, and

the condition is one rather of hardness than softness. After a time, in fact, the condition becomes merged into one of congestive hypertrophy, or, as it would be termed by Dr. Thomas, "areolar hyperplasia" of the uterus.

The microscopic condition of the uterus will be found to vary according to the time which has elapsed since parturition or abortion; for if the examination be made early muscular fibres in excess will be found, whereas later on there will be a superabundance of cellular connective tissue material.

Displacements, especially flexions of the uterus, are causes of sub-involution of the uterus. Thus, I saw a case of acute displacement of the uterus backward, occurring very soon after labor, where the uterine fundus must have retained its abnormal size, in this retroverted condition, for many days after the displacement occurred. The sub-involution in this case was thus caused by the displacement; probably in consequence of the arrest of the circulation in the uterus thereby produced. I have seen several other cases of somewhat similar character. It is not, however, necessary that the uterus should be displaced in order that sub-involution may occur, for cases are encountered where there has been no such dislocation. Of the other causes of sub-involution of the uterus probably *mal-nutrition* and *weakness* are most common. The weakness may be of long standing or it may be the result of excessive loss of blood at the time of labor or of miscarriage. The feebleness of the patient is the cause of the want of vigor in the uterus, the contractions of which do not occur in due force. Hence protraction of the process of involution.

Sub-involution readily passes into a condition of chronic congestive hypertrophy; the shape of the uterus, the thickness of its walls, may remain the same, but it then becomes harder and firmer. But in some cases this change into a condition of hardness does not occur, the uterus remaining abnormally soft, spongy, and flaccid for a considerable time. Cases in which this latter occurrence is observed are those in which the nutritive force is at a very low ebb; reparation is slow, and a passive congestion results.

Sub-involution is observed sometimes in conjunction with inflammatory conditions of the parts around the uterus. Thus, in pelvic cellulitis, following labor or abortion, the uterus remains large and heavy; and although in some cases the bulk of the uterus may be partly due to effu-

sion of lymph in its tissues, yet the greater part of it is evidently simply sub-involution. The disturbance going on in the immediate vicinity of the uterus, compression and swelling of lymphatics, etc., arrest the process of involution in these cases of peri-uterine cellulitic inflammation.

Treatment.—There are two principal indications. 1. To remove any impediment which may exist to the easy and free circulation of the uterus. 2. To quicken and invigorate the nutritive process in the body generally. There are also subsidiary measures to be taken.

1. If there be a displacement it must be rectified. If the bowels are in a chronically loaded state they must be relieved by daily gentle aperients or injections. The horizontal position may be required.

2. The food must be plentiful and of a highly nutritious character. In short, a liberal diet is necessary, and when the appetite is bad, food must be given frequently and in small quantities at a time.

3. *Subsidiary Measures.*—Warm injections or the douche of warm water once or twice daily. Ergot, either alone in small doses once or twice a day, or together with iron, frequently proves very useful. Warm sponge baths, warm sea-water baths, friction of the skin, fresh air, and such general hygienic measures as may be specially required, should not be forgotten. If the case be seen some weeks after labor or miscarriage, the general treatment required is much the same as for chronic congestion of the uterus. Bromine and iodine are valuable medicines in the later phases of the disorder. Quinine and iron are of great service in many cases. It is probable that electricity would prove serviceable in some instances.

ATROPHY OF THE UTERUS.

Atrophy of the uterus, in the true sense of the word, implies not a congenital defect as regards size, but an *acquired* smallness.

Atrophy of the uterus occurs at a period of sexual involution; the organ ceases then to exercise the ordinary function, menstruation and the capability of impregnation coming to an end. The walls of the uterus become under these circumstances thin, and the whole organ smaller than before. These changes are attended with the further consequence that the uterus is less vascular and less sensitive than before. The organ has ceased to play its part, and its

condition functionally very much resembles that before puberty. Morbid processes affecting the tissues of the uterus are not unfrequently arrested by the occurrence of this, which may be termed its natural atrophy. But it appears that the uterus may undergo this senile change at an unnaturally early age, thus constituting a condition which Chiari* described as "premature senile atrophy." Sir J. Y. Simpson† ascribed this to "super-involution" after delivery—a questionable theory.

Premature atrophy of the uterus might be expected to be found in women who have prematurely ceased to menstruate, but its occurrence in association with still persisting ovarian activity is, as would be expected, extremely rare.

The uterus affected with atrophy of the character alluded to is universally small, the cervix participates in the change, the vaginal portion becomes shorter, and the os uteri smaller. The tissues of the organ become somewhat harder.

Atrophy of the uterus of another kind may be produced by the operation of external influences. Thus, when the organ is pressed upon by tumors in the neighborhood, the walls may become very thin. I have found the organ excessively small from this reason in some cases of ovarian tumor and of fibroid tumor.

Local atrophy occurs in cases of flexions of the uterus, the walls becoming in many cases very much diminished in thickness at the part which is the seat of the flexion.

Another kind of atrophy is that accompanied with excessive dilatation of the uterine cavity, such as now and then occurs from fluid or gaseous distension of the organ. The uterine walls may be found in such cases excessively thin. The form of atrophy here alluded to has been described as "eccentric atrophy" of the uterus.

HYPERTROPHY OF THE UTERUS.

Congestive hypertrophy has already been described (see p. 110). Hypertrophy may, however, exist without congestion.

Like many other organs of the body, the uterus is liable

* "Klinik der Geburtsk." 1855, p. 371.

† Clinical Lecture on Amenorrhœa. *Med. Times and Gaz.* 1861.

to variations in size. This variation is, however—in individuals in a state of health—limited. During the catamenial period, the organ becomes enlarged, but this enlargement is normally only temporary, and a general and persistent addition to its bulk only occurs under abnormal circumstances. The very considerable growth which the uterus undergoes during the period of gestation is of course an exception to this statement.

FIG. 24.*



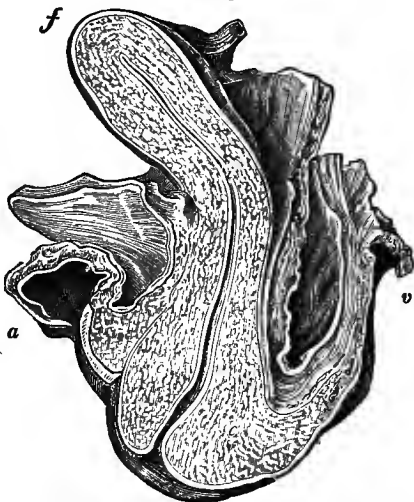
The simplest form of hypertrophy of the uterus is that witnessed in cases where the uterus is, and has been, influenced by pregnancy or by the presence of a tumor or tumors within its walls. This subject has been more fully considered elsewhere (p. 119) in connection with the subject

* Fig. 24 represents a case of general hypertrophy of the uterus, and of the cervix uteri, in a patient affected with menorrhagia. Amputation of the vaginal portion of the cervix was performed in this case.

of chronic congestion of the uterus, with which condition this simple hypertrophy is generally associated. Here the enlargement affects the body and the cervix of the uterus pretty equally.

The most common, and indeed the most marked form of hypertrophy of the uterus is witnessed in women who have been pregnant, and just described (p. 121) under the term "Sub-involution." When this "involution" does not occur regularly and promptly, the organ is liable to become affected with hypertrophy of a *persistent* character. Even

FIG. 25.*



in these cases, however, the degree of hypertrophy witnessed, if there be no other cause in operation, is not very great. In hypertrophy of the uterus due simply to "defective involution" after deliveries, abortions, etc., the increased length of the organ does not, I believe, ever exceed one inch. (It is necessary to observe that this does not apply to any measurement taken within the first two or three weeks after the labor or miscarriage.) One inch increased

* Fig. 25 (from Farre) represents longitudinal hypertrophy of the cervix, of a marked character. Other illustrations will be found in the Chapter on Prolapsus,

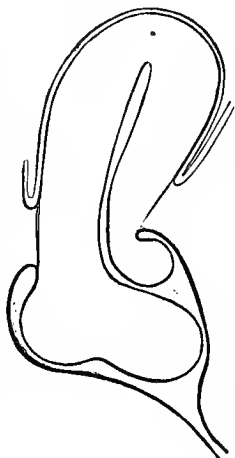
length usually implies, however, considerable addition to the general bulk of the organ, and entails various inconveniences, which have been already particularly described. Hypertrophy, the result of chronic congestion and defective involution, one or both, is most palpably evident in the cervical region, as this can be easily reached and inspected, but it is rarely limited to this portion.

Hypertrophy of the uterus is especially liable to occur in association with growth of fibroid tumors within the walls of the organ. A fibroid tumor of the uterus, growing in the middle of the thickness of the wall, not unfrequently produces great hypertrophy of the uterus, for the uterus may expand and grow not merely around the tumor, but in every other part also. The bulk of the uterus may, under such circumstances, equal that of a child's head, but the greater part of the bulk would then be made up of the tumor. In cases of fibrous polypus of the uterus, the organ grows sometimes to a very large size, but in such cases the uterine walls have less thickness. Hypertrophy of the uterus to a slighter degree is witnessed when fibroid tumors grow from its outer surface. Again, it is not rare to meet with enormous fibroid tumors growing from the external surface of a uterus, itself even smaller than usual.

Partial hypertrophy of the vaginal portion is sometimes observed.

Hypertrophy with Elongation.—The uterus not unfrequently undergoes, in consequence of pressure, or in consequence of traction in a particular direction, an elongation to which the term hypertrophy has not always been very correctly applied. This elongation more particularly affects the cervical portion of the organ, not simply that part which projects into the vagina, but the cervix properly so called. Hypertrophic elongation of the cervix constitutes one of

FIG. 26.*



* Fig. 26 represents hypertrophy of the posterior lip of the os, of non-malignant character.

the forms of prolapsus of the uterus (see Prolapsus), but it is also sometimes witnessed when an ovarian tumor pushes the body of the uterus upward, and thus elongates the cervix. In such cases the walls of the canal do not usually grow, and the effect of the traction is thus to render them actually thinner. The cervix of the uterus may, under such circumstances, become three, four, or five inches in length. The lower portion of the cervix—*i.e.*, the vaginal portion—sometimes, however, undergoes a true hypertrophy, the result of which is that a conical or snout-like substance of considerable size is then found occupying the vagina, nay, even projecting beyond the ostium vaginæ. A more limited hypertrophy is depicted in Fig. 26.

CHAPTER IX.

TREATMENT OF THE VARIOUS TEXTURAL DISORDERS OF THE UTERUS—MALNUTRITION OF THE UTERUS, CONGESTION, CONGESTIVE HYPERTROPHY, ETC.

General Preventive Treatment—Dietary necessary—Importance of deficient Dietary as a Cause of Uterine Disease—Defects Qualitative and Quantitative—"Chronic Starvation," a Real Disease—Its Importance—Method of dealing with it—Preventive Treatment as regards Menstruation—Preventive Treatment in Child-bed—Congestion of the Uterus and Congestive Hypertrophy—General Treatment—By Altering Position and Shape of Uterus—By Leeching, Scarifications, etc.—Use of Hot-water Injections—Baths and Watering-places—Astringent and Caustic Applications to the Os Uteri—Internal Remedies.

The first and most important question to be dealt with is the *preventive treatment*.

Observation has led me to the conclusion that it is rare to meet with congestion of the uterus together with its various complications, in cases where the uterus was previously in a state of health. An attempt has been made to indicate this "previous state" of the uterus under the head of "mal-nutrition" (undue softness) of the uterus. That subject here finds its practical application.

TREATMENT OF MALNUTRITION OF THE UTERUS.

Whatever tends to maintain the body generally in a state of health tends also to maintain the integrity of the uterus. General treatment good for the body at large is good for a part of it also.

It will not be credited by any one who has not taken the trouble to inquire carefully into the previous habits and history of patients suffering from the ordinary diseases of the uterus, how common it is in these cases to meet with evidence of the strongest character of a long-continued insufficiency of dietary, this insufficiency being in operation up to the time of the patient coming under observation, or having been in operation for a very considerable period at a former time. It is thus quite easy to track the process of commencing ill-health to its source, and the facts elicited by cross-examinations will almost invariably enable the inquirer to say not only that the disease began at such and such a time, but to state why it was so.

It does not appear that what may be termed elementary nutritional deficiency has been assigned, as yet, its due place in the etiology of uterine diseases. I am more and more convinced that the part it plays is a most important one.

The dietary must then be the first object of attention. In a growing girl the dietary should be a generous one. Two mistakes are liable to be made in the matter of the dietary: one relates to the *quality* of the food given; the other to the *quantity*.

1. *As regards the Quality of the Food.*—It is not uncommon to meet with cases where for one reason or another the food given is defective in quality during what may be termed the developmental period of growth of the uterus, viz., between the ages of twelve and sixteen or seventeen. This defect is more likely to consist, so far as my experience shows, in an insufficiency of meat food. The ordinary bread and butter which constitutes the principal food in many boarding-schools is not adapted for the production of healthy tissues. Meat is the article of diet which I have generally found to have been deficient in the dietary of young women who have presented evidences of mal-nutrition of the uterus later on.

Motives of economy sometimes operate to the exclusion of a liberal meat dietary. But in the middle and higher classes of society these motives are non-operative, and it is not rare to meet with cases of young women brought up in what is termed a luxurious manner, who have never been permitted during the growing age to have more than one meal containing meat in the day. This practice appears to me, judging from numerous cases whose details could be

mentioned, to have inflicted in those instances the greatest injury on the constitution, and to have predisposed to the grave evils for the relief of which advice was sought years later.

2. *The Quantity*.—It is well known and generally admitted that robust health is associated with good appetite. A good appetite insures the taking of sufficient food—when it can be procured. The appetite is, however, too often taken as the guide in the opposite case, where it is deficient, absent, or capricious, and it is too generally supposed that if there is no appetite for food there is no necessity for it. This mistake—a grievous one—is common amongst the public at large, but it does not appear that it is sufficiently recognized as a mistake even in professional circles. The human machine is kept going by a process of repair. There is an incessant waste, and there must be an incessant repair to make good the waste, or evil necessarily follows. It is true that the quantity of food taken is often reduced for a considerable time without the individual apparently suffering materially. The human frame is so full of resources that it resists for a long time the deteriorating influences of a lessened dietary. The waste affects some non-vital part and life goes on. But there is a limit to this endurance. When the diminished dietary has been in operation for a long time—some months for instance—it is almost certain that in case of an individual of only average stamina mischief will result. Of necessity, the actual quantity of food required *per diem* is larger at the time the growth is most rapid, and consequently deficiency in quantity is most felt at this period. In the case of boys and young men there is not generally any reluctance to indulge an appetite which should be a large one, but in the case of girls it is not uncommon to find that there is a sort of feeling that the possession of a good appetite, or at all events the innocent gratification of it, is a thing to be deprecated. And it is the fact that many young women do themselves mischief by deliberately taking less than is required to maintain the body in a state of healthy growth.

It has been already stated that the appetite is often misleading. This appears to be a point which requires to be emphasized. If the appetite is wanting or defective, there is probably something wrong, and steps should be taken to ascertain what has destroyed or lessened the appetite. There are many possible causes for a want of appetite—de-

fective hygienic conditions of various kinds, actual disease of some part of the body, etc. But what should be recognized is, that neither patient nor doctor should sit down and simply allow things to go on in this unsatisfactory manner. Such neglect will lead eventually to disaster. The want of appetite is perhaps the first in a chain of symptoms which become graver and more serious as the body becomes month after month debilitated by the slow starvation which it causes.

There is much reason for the belief that the most important of the diseases which prove fatal to young persons—the tubercular affections—have their origin in deficient feeding. It is, at all events, certain that this is one of the most important of the factors concerned in the production of these diseases. If we take the case of a young woman growing up under such defective alimentary conditions as have been above described, it is uncertain what precise effect the chronic starvation of which she is the subject will have upon her—or, in other words, what organ of the body will first feel the attack. It may be the lungs, or it may be the uterus. In the one case pulmonary consumption occurs, in the other, disease of the uterus. My own experience has brought very numerous instances of the latter result under my notice, and from some well-marked cases of the other kind which I have seen I have been led to attribute the first step downward to the same cause in each class of cases, viz., defective alimentation. It is rational to conclude that deficient alimentation will have a tendency to affect all parts of the body; but it is in accordance with experience that it affects some organs more than others, various accidental circumstances influencing the body—habits, temperament, surroundings of various kinds, determining which particular organ shall feel the impetus of the blow in the first instance.

Judging from experience it seems to me very desirable that “chronic starvation” should be admitted into the list of recognized diseases. When alimentation is always deficient the condition of the body is one of chronic starvation,* and this is the preliminary—in the majority of cases perhaps a necessary preliminary—to the advent of the various

* See Annual Address to the Harveian Society, “On Chronic Starvation.” *Lancet*, Jan., 1879.

serious disorders recognized in medical classifications of disease.

There are, of course, hygienic laws to be complied with. Fresh air, sufficient clothing, exercise well adjusted to the capabilities and requirements of the body—all these are very necessary, but the maintenance of the proper degree of nutritional activity is of the first importance. Change of air, change of scene, visits to watering-places, baths, etc., change of occupation—these are often beneficial; but why? Because they restore the lost appetite; and if they fail in this, comparatively little benefit is derived.

Having treated many cases of commencing uterine disease, characterized as above described by softening and weakness of the uterus, I have seen the great benefits of careful and assiduous feeding in the class of cases requiring it, and have found this method of treatment so universally successful that it can with the greatest confidence be recommended. The principles which apply in cases when the malady has to be cured are, of course, available in the preventive treatment.

The foregoing remarks indicate the importance which I attribute to food and feeding in the treatment of chronic uterine maladies. In a paper read before the Obstetrical Society of London in 1880, I stated that at the All Saints' Institution during seven years I had treated sixty-seven cases, the majority of which were cases of uterine chronic disease associated with great general weakness and a condition of "chronic starvation." "The first principle of the treatment was *rest*." The next was to improve the general nutrition of the body. Most of the cases afforded marked instances of chronic starvation, sometimes of several years' standing.*

I give the above quotation to show the lines which my practice of late years has followed.

In connection with this subject it is next to be stated that Dr. Weir Mitchell,† of Philadelphia, has for some years carried out a method of treatment in cases somewhat resembling those treated by me in All Saints' Institution, consisting in rest, *massage*, electricity, and food, all very systemat-

* See Report of Sixty-seven Cases of Uterine Distortion, etc. "Obst. Trans.," vol. xxii.

† "Fat and Blood: and how to make them." London edition, Lippincott, 1878.

ically and persistently used, and with results the success of which I can quite understand from what I have observed in my own cases. Dr. Playfair has recently* made the profession in this country better acquainted with Dr. Weir Mitchell's very practical and successful method, and has published cases showing the great success which has followed his adoption of Dr. Mitchell's treatment.

Dr. Playfair heads his paper on the subject "Nerve Prostration and Hysteria connected with Uterine Disease." The cases are those in which the patient has become a confirmed invalid, and in which there is or has been uterine mischief: "the pain, the backache, the leucorrhœa, the difficulty in progression, the disordered menstruation, which are attendants on the local troubles, have ended in producing a state of general disturbance in which all the bodily functions become implicated. The nervous system is profoundly affected, the blood impoverished, and the general nutrition at the lowest ebb." There is wasting of the fatty tissues, the appetite is gone, there is dyspepsia, and all exercise is abandoned. The patient becomes emotional and hysterical, and all efforts at cure prove unavailing.

An outline of Dr. Weir Mitchell's treatment is as follows:

1. Absolute repose and seclusion from home or other accustomed influence for from six to eight weeks, the patient being only allowed to sit up gradually.

2. Employment of massage of all the muscles twice a day for half an hour at a time at first, and later on for an hour and a half.

3. Electricity by the interrupted current twice daily, the sponges being so employed as to work all the muscles successively.

4. Diet. At first milk is given every three hours—in small quantities at first, later increased. Then more ordinary food of all kinds is given, the quantity being gradually increased, and soon very large quantities are capable of being taken, the massage and electricity, as it is considered, enabling the patient to take food in gradually increasing quantities until, as in cases related by Dr. Playfair, a very enormous amount is taken daily.

The system of treatment as above described has the effect of quickly improving the strength, in restoring the lost adi-

* *Lancet*, 1881.

pose tissue, and enabling the patient to move about, and restoring, in fact, the lost vitality and locomotive power.

The massage and electricity are two elements in the treatment of which I have had but limited experience. I have employed baths and friction of the skin as a regular part of the treatment in cases of great nutritional impoverishment, in addition to the rest and feeding, and have thus obtained extremely good results; but it seems to be proved by Dr. Mitchell's cases that massage and electricity are extremely important additional means, and there is no doubt that they are likely to help materially in promoting healthy nutritional changes.

It is to be remarked that the incapacity for locomotion observed in the class of cases described by Dr. Mitchell is, to my mind, evidence that the condition of the uterus in his cases was, as a rule, that which I have described as abnormal softness of the uterus. The so-called "hysterical" element in these cases is one which will be discussed more properly in the chapter on the Neuroses of the Uterus.

TREATMENT OF CONGESTION OF THE UTERUS.

Congestion is frequently associated with other conditions from which it is impossible to dissociate them in practice. Flexions of the uterus, softening of the organ, or hardening and a certain degree of hypertrophy are the principal other conditions likely to be met with.

The congestion has to be treated with due regard to the proper relation subsisting between it and the other conditions possibly, and generally, present.

According to my experience, the cases are few in which real good can be effected without a careful attention to the general treatment, by the restoration of the nutritional activity to its proper healthy state as an integral part of the treatment. There is frequently present a condition of great general debility out of which the patient has often to be slowly dragged, as it were, by persevering efforts in this direction. A patient who has been persistently underfed for three or four years will not be capable of restoration to strength in a short time; and when the uterine congestion is associated with such long-standing debility, much time may have to be spent in feeding the patient before the local ailment is satisfactorily relieved.

The method of feeding a patient so reduced, which I have

long practiced, is to give food very often, of such a kind that it can be easily digested, and in very small quantities at a time, sometimes every two hours. Liquid food, soups, milk, eggs beaten up, etc., are best at first; solid food, also in very small quantities, to be given later on. The digestive power is then improved and the appetite often returns with unexpected rapidity. The addition of massage and electricity, according to Dr. Weir Mitchell's plan, promises to be very serviceable in expediting this nutritional improvement. The important principle of endeavoring to make up for past deficiencies by careful diet cannot be neglected if success is to attend our efforts to cure the patient.

My experience has taught me much as to the power of food in curing disease, particularly in the cases coming before me which have been mostly uterine. And in fact I may say that I have been thus taught some very important lessons in regard to their pathology.

The efficacy of general treatment in cases of uterine disease—the “constitutional” treatment as it has been termed—has been insisted on by the late Dr. Rigby, Dr. Henry G. Wright and other gynæcologists. So far as I have been able to determine, the “constitutional” treatment is beneficial in direct proportion as it helps to more vigorously nourish the body and every part of it, including the uterus. Whatever conduces to this end is likely to be of service. Food is in fact the great constitutional remedy.

PREVENTIVE TREATMENT DURING MENSTRUATION.

The promotion of regularity as regards quantity and time of appearance of menstruation is very important in order to prevent congestion of the uterus. Care during menstruation is incumbent on all women, and even those in apparently good health cannot disregard themselves in this respect without danger. It is highly important that the natural congestion, as it may be termed, of menstruation should not be protracted. If there is the slightest tendency to disease of the uterus rest should be taken at the period, and violent exercise avoided, especially in conjunction with outward application of cold. Sitting in wet clothes or wet shoes, standing on damp or wet floors are all sources of danger. In the work of Mary Putnam Jacobi *

* “The Question of Rest for Women during Menstruation.” By Mary Putnam Jacobi. New York, 1877.

will be found the results of extensive inquiries as to the necessity for rest from mental and other work during the period of menstruation. The general conclusion is that work cannot be advantageously continued during the menstrual period in the majority of cases.

PREVENTIVE TREATMENT IN CHILD-BED.

Congestion of the uterus has so frequently its starting-point in a "bad getting-up," as it is termed, after parturition, that some special remarks are required on the subject of the preventive treatment.

Above all it is necessary to secure healthy and rapid involution of the uterus, whereby its bulk is reduced, the nutritive changes hastened, and the restoration to its normal size and bulk effected. The patient should maintain the horizontal posture for some days, and should not be allowed to perform movements calculated to strain the abdominal muscles. And as soon as possible after the lochia have ceased, the use of the hip-bath, or of the vaginal douche should be commenced. Great care should be taken to prevent constipation of the bowels. The diet should be very carefully supervised. In women who have been in a good state of health previously it is simply necessary to give ordinary food and in ordinary quantities, not omitting to do so even on the day following the delivery.

In those patients who are weakly food must be given very often; and liquid nourishment, as soups, eggs, beef-tea, etc., are to be given frequently and between the ordinary meals. Night feeding is very necessary in weakly women during child-bed, great exhaustion often setting in about four or five in the morning; exercise should be taken in moderation at first; walking should not be commenced until two or three weeks have elapsed. It is usually advisable to apply a moderate support to the abdomen by means of an elastic bandage. Very great benefit will be derived from attending to these simple rules, and it is very certain that a neglect of them has frequently the result of originating a troublesome and painful disease. It is important, as a further means of securing perfect contraction of the uterus after delivery, to induce the patient to suckle her child, although this course cannot from the debility of the patient always be recommended. In women who are liable to abortions, the majority of whom are affected with uterine flexion, it is necessary to take double precautions; we fre-

quently find that the uterus becomes diseased from the fact that the pregnancies rapidly succeed each other, the uterus not having recovered its natural size when it becomes again occupied by an ovum. In such cases, unless care be exercised, the liability to abortion is perpetuated, and the local evil intensified. We must insist on the necessity for allowing the uterus a period of rest; this is equally necessary after an abortion, and after an ordinary labor; in many cases the habit of abortion is only to be broken through by enforcing a separation of the husband and wife for some months, during which time efforts are to be made to reduce the uterus to its normal size and to its natural condition. There can be no doubt that by judiciously watching over and supervising the function of parturition, and regulating the conduct of the patient afterward, we can effect much good in cases where the uterus is liable to fall into a state of chronic enlargement and congestion.

The congestion which is apt to occur after labor is of a passive kind; the large size of the uterus enables it to hold much blood. It is also softer than usual, and the great danger of this undue softness and weight of the organ is that there thus arises a strong predisposition to severe displacement of the organ. The order of events is frequently: 1. Defective involution; 2. Congestion; 3. Displacement, including flexion; 4. Congestion created and kept up by the flexion; 5. Hindrance to further perfection of the involution by the other already mentioned conditions.

GENERAL TREATMENT OF CONGESTION AND CONGESTIVE HYPERTROPHY OF THE UTERUS.

It is undoubtedly the fact that distortions of the uterus are in great part the cause of congestion of the uterus as we meet with it in practice. When the congestion is a mechanical congestion it can be quickly and materially relieved by removing the cause—that is to say, by taking steps to restore the uterus to its normal shape and position, thus allowing the blood in the uterine vessels more freely to circulate. The uterus is in many cases extremely amenable to mechanical influences acting from without. Thus in a case of ante flexion the placing of the patient on the back will help to remove congestion associated with dislocation, whereas in cases of congestion due to retroflexion the reverse treatment will be necessary. So, again, the knee and elbow position, by raising the fundus uteri, often

so assists the uterine circulation that congestion is thereby relieved. These points will be more fully enlarged upon in the chapter on the Treatment of Flexions. This method of treating congestion of the uterus is of primary importance, and it can frequently be carried out without resort to instruments at all. The effects producible are sometimes extremely rapid, and the principle of treatment is so simple that it is readily understood and applied in practice.

The practice of leeching the uterus in order to remove congestion is in its way a mechanical method of treatment. It is one which was very much practiced a few years ago, and it is still largely employed by practitioners who are not practically aware of the intimate connection as cause and effect subsisting between flexions and chronic congestion of the uterus, and who have not had opportunities for observing the extreme rapidity with which the congestion as a rule subsides when the uterus is so treated that its circulation is no longer obstructed. The withdrawal of blood from the congested os uteri by leeches removes for the moment the congestion of that part (though it has less effect on the congestion of the body of the uterus), and when the process is repeated for some weeks two or three times a week, has, no doubt, an appreciable effect of a beneficial character. But if the same result can be obtained by other and more simple means, and without taking away blood, and therewith strength, the simpler method will in the end come to be preferred. On the view which supposes the congestion to be a sort of disease of itself, the leeching would undoubtedly commend itself as rational; but if the congestion be a mere mechanical result of some other condition of the uterus, obviously the rational course to pursue will be to deal with that other condition, in the first place at all events. Leeches will, however, be found useful in cases where the uterus has become hypertrophied as well as congested.

Certain manipulations necessary in applying leeches must be mentioned. Unpleasant or inconvenient results are apt to occur when the leeches attach themselves either within the os uteri, or on the walls of the vagina. A moderate-sized speculum is to be first introduced, so that its upper extremity touches the vaginal portion of the cervix at every point, and a small piece of lint is next inserted in the os itself. The leeches (three or four in number) are then pushed up the tube, and allowed to fix themselves on the exposed portion of the cervix. It may be necessary to use an injec-

tion of tepid water previously to applying the leeches, and to remove the discharge covering the surface of the cervix by means of a piece of lint. When the leech attaches itself to the interior of the os, or to the vaginal wall, the patient usually experiences, especially in the former case, sharp pain. To detach the leech under such circumstances, an injection of salt and water is to be used. It must not be forgotten that the bleeding from leech bites on the os uteri is sometimes very profuse, it may be even alarming.

Scarifications or punctures of the congested uterine cervix, either externally on the surface of the vaginal portion, or within the canal, are of great use in some instances, especially in reducing the size in cases of hypertrophy of the part. The remedy is applicable to the same class of cases as those requiring leeches. A number of slight scarifications are better than two or three deeper ones. In performing scarification of the cervical canal, a small knife of peculiar shape and construction is necessary.

Use of Hot-water Injections.—Of late years the efficacy of hot-water injections—temperature 100° to 110° —has been frequently observed in the treatment of uterine congestion. Dr. Emmet, of New York, largely employed it, and I have for the last two or three years rather extensively recommended it. On the whole there seem to be good reasons for avoidance of cold water for injections or affusions to the uterus. There was formerly a notion, which I myself shared, that cold water was a good application in cases of congestion of the uterus. I no longer think so. The hot-water high-temperature douche may be employed twice a day; the quantity used may be one or two pints or more.

In cases of congestive hypertrophy of the cervix uteri; when the os presents nodular masses instead of the natural-shaped orifice, the repeated use of hot water as above mentioned is a valuable assistance in promoting absorption.

[As bearing on this subject I insert here Dr. Emmet's remarks on the use of hot-water vaginal injections in uterine disease. (Emmet's "Principles and Practice of Gynæcology," second edition, pp. 81 and 119.)

"Hot-water vaginal injections, of different degrees of temperature, according to the circumstances of the case, will prove an invaluable aid in the treatment of all uterine diseases. It is, therefore, of the greatest importance that they should be administered properly. When given in the upright, or sitting position, the effect is very little more

than to wash out the vagina. *The full benefit* CAN BE OBTAINED BY ADMINISTERING THEM ONLY WHILE THE PATIENT IS LYING ON HER BACK, AND SHE CANNOT EFFICIENTLY GIVE THEM TO HERSELF. It is ALSO NECESSARY THAT HER HIPS SHOULD BE ELEVATED, and the quantity of water used should not be less than half a gallon for each injection.

"A bed-pan of proper shape and size is indispensable to protect the clothing of the patient. The one known in the crockery shops as the English bed-pan, but now somewhat out of use, answers the purpose very well. For temporary use, the India-rubber inflated-cushion bed-pan will answer, but it is liable to stick together from the effects of the hot water.

"The shovel-shaped French bed-pan, more in general use in the sick-room, does not answer for this purpose, as it allows the clothing of the patient to become wet. When using the regular bed-pan, it is necessary to place the patient so far forward on it that her weight will not tilt it up. Or the handle, which is hollow, may be turned to one side, and a piece of large India-rubber tubing stretched over it to allow the water to pass off into a receptacle placed alongside of the bed. For use in my private hospital I have this form of bed-pan made of copper, and, instead of so large a handle, there is a small spout which can be kept closed when not needed, by a cap over it. When a large injection is given, the cap can be removed, and a small piece of tubing placed over the spout will carry off the water.

"The injection can be better administered to the patient after she is undressed for the night and in bed. She should be placed near the edge of the bed with her hips elevated as much as possible by the bed-pan, and a small pillow under her back, the lower limbs being flexed. Her body must be covered, to protect her from cold, and her position made perfectly comfortable; when the bed is a soft one, a broad board should be placed under the pan to prevent it from sinking down by the weight of the patient, and to keep the hips elevated. The vessel of hot water is placed on a chair by the bedside, and the nurse passes the nozzle of the syringe over the perineum into the vagina, directing it along the recto-vaginal wall until it has reached the posterior *cul de sac*. The water must be thrown in, at first, very carefully, until the vagina has become distended. If the nozzle is not properly introduced, the stream of water may be thrown directly into the uterine canal. The forci-

ble entrance of any fluid into the undilated uterus causes intense pain, and frequently alarming symptoms of nervous prostration or collapse; and sometimes it is the cause of an attack of cellulitis. At the completion of the injection, the vagina can be emptied by depressing the perineum for a few seconds, with the finger on the nozzle of the syringe before withdrawing it, and, as the bed-pan is removed, a napkin should be placed against the vaginal outlet to absorb any water which may have been retained.

"When circumstances prevent the injections being thus administered, it is better to use a fountain, siphon, or syringe, than that the patient should attempt to give them to herself. This mode, however, can only be regarded as a substitute, for it is never as efficacious. In any event the same elevated position of the hips is necessary. A steady stream is never as serviceable as the interrupted current from a Davidson's syringe.

"Hence it would seem as if, in addition to the heat of the water, the jet from the syringe acts as a stimulus to excite the blood-vessels to contraction."]

Baths and Watering-places.—In obstinate cases, the greatest benefit is sometimes derived from the internal and external use of mineral waters of various kinds; the effects produced being dependent partly on the change of scene and occupation, partly on the increased activity of the skin induced by the use of the baths, and partly on some special action of the waters used. The choice of a watering-place is a matter of some moment. In cases complicated with dyspepsia and with defective action of the abdominal circulation, Vichy or Hombourg may be recommended. Where the action of the abdominal viscera is sluggish, and where there is great constipation, the baths of Carlsbad or Marienbad are very useful, especially in the case of patients who have been in the habit of indulging too much in the pleasures of the table. Many others might be mentioned, equally efficacious in improving the condition of the abdominal circulation and the state of the digestive organs, such as the waters of Püllna, Seidlitz, Purton, etc., which contain sulphate of magnesia and soda, and are therefore of an aperient character. In cases where we desire to act chiefly on the skin, and to effect a derivation to the surface, thermal waters offer advantages; the waters of Wildbad, Schlangenbad, Gastein, Clifton, Buxton, etc., deserve mention in this respect. Warm sea-water baths act in like

manner; they are very efficacious, and have the additional advantage of being accessible. There are cases in which the uterus and pelvic organs generally appear to be in an atonic relaxed state, and for the relief of this class of patients chalybeates are found most serviceable. The waters of Schwalbach, Pyrmont, Spa, Driburg, Kissingen, Franzensbad, and Fachingen, are the best adapted for patients suffering from the above symptoms, associated as they usually are with anæmia, pallidity of the surface, tendency to headaches, etc. The iodo bromated waters of Kreuznach, Hall, Durkheim, and Krankenheil, are specially to be recommended in cases of the more chronic kind, especially when the uterus is the seat of indurations, however caused. The Woodhall Spa in Lancashire enjoys a reputation for qualities analogous to those of Kreuznach. For neuralgic or rheumatic cases, Wiesbaden, Baden-Baden, Ems, and Bath enjoy deserved repute. In cases where it is considered desirable to administer iron in small quantities, together with an aperient, waters such as those of Kissingen or Selters are the best. The baths of Driburg have been found peculiarly efficacious, taken during pregnancy, in cases where there is a tendency to disease of the fœtus; the waters in question are chalybeate, but contain also lime in solution.*

Astringent and Caustic Applications to the Os Uteri.—As subsidiary measures these local applications are frequently of great service.

Solutions of alum or of tannic acid, or the latter in form of oak bark decoction, are the astringents most commonly employed in the form of an injection used once or twice daily. Many other astringents have been also employed with advantage. Caustic applications have been very frequently employed in cases where the malady supposed to be present was ulceration of the os uteri, and in another class of cases also where the lips of the os are hypertrophied (congestive hypertrophy). The caustic agents used have been of various kinds, from the solid nitrate of silver, comparatively mild in its action, to the acid nitrate of mercury or caustic potash. The stronger caustics have been rather frequently employed to melt down and actually destroy the nodular projecting lips of the os uteri as well as to produce

* For further information on the subject of baths, see Dr. Althaus' work, "The Spas of Europe." London: Trübner.

a healing of the so-called ulcers. The use of severe caustics in this manner had a powerful effect, and, in not a few cases, not only removed the hypertrophy but produced a closure of the aperture of the os uteri, with consequent grave inconveniences. When the lips of the os are fissured deeply, and present nodular projections, the best treatment consists in first of all reducing the bulk by persevering with daily injections of hot water, and afterward repairing the lacerations by a plastic operation (see chapter on Lacerations of the Cervix Uteri).

The waters of Kreuznach are specially serviceable in the concentrated form in cases of chronic congestive hypertrophy of the uterus and cervix, their use being continued for some few weeks at a time.

The milder caustic agents are of service in accelerating the removal of hypertrophies of the lips of the os uteri. The solid nitrate of silver and the iodine liniment, or the liquor (which latter is the weaker) of the British Pharmacopœia, are the agents I prefer. Strong solution of bromine is also a useful agent for the purpose. These agents are applied on cotton-wool by means of the speculum: the os and cervix being well exposed, the secretions are to be removed and the surface well dried by means of a piece of lint or cotton-wool, and the caustic then applied.

The only cases in which stronger agents seem admissible are those in which there is a small growth which requires actual removal—for instance, those in which the interior of the os presents those excrescences or developments of the mucous membrane known as *mucous polypi*; those cases also in which the mucous follicles around the os become swelled out and distended, presenting the little round enlargements known as the *Nabothian bodies*. In the application of the stronger caustics, we have an expeditious mode of dealing with the pathological conditions in question.

Whenever the strong caustics are used, very great care is necessary to prevent the tissues adjoining the cervix uteri from being injured. These tissues must be guarded in a suitable manner during the operation, and precautions used to prevent the caustic applied to the surface of the cervix from coming into contact with the opposed surfaces of the vagina, when the operation is over, and the speculum withdrawn.

The *actual cautery* has been a favorite remedy, especially in France, in the treatment of chronic induration or inflam-

mation of the vaginal portion of the cervix uteri. The application is made through a horn speculum, specially constructed for the purpose, and is repeated at intervals of a few days, each portion of the indurated surface being thus successively covered with eschars.

Internal Remedies.—On the supposition that proper measures are being taken to remove the cause of the congestion and improve the uterine circulation, we have to consider what other internal treatment is required. Ergot given at intervals in small doses, or by the subcutaneous method is one of the internal remedies most appropriate for reducing chronic uterine congestion. Probably next in order stands bromine, or mineral waters containing it. The Kreuznach water is one of these, and its use continued over many weeks has a considerable effect in most instances. Bromide of potassium may be given as a medicine, ten or fifteen grains twice a day. It may also be used as an injection for the vagina. The Kreuznach water (in the more or less concentrated form) can be very usefully thus employed. Its topical action on the uterus is undoubtedly good, especially in cases where there are hypertrophies of the os uteri present.

A mild mercurial course, following the suggestion of Dr. Oldham, has been often employed in order to reduce the size of the organ in cases of chronic congestive hypertrophy. The remedy is undoubtedly efficacious in some instances. But it requires care, for, if the patient be very weakly, it may do more harm than good.

Relief of Pain.—There are many cases of congestion of the uterus in which immediate treatment of a palliative character is required for the relief of pain.

The remedies, opiates, fomentations, etc., which may be advantageously employed under such circumstances will be described in the chapter on Treatment of Flexions.

CHAPTER X.

ABNORMAL CONDITIONS OF THE LINING OF THE UTERUS.

General Employment of term Endometritis—Explanation of these Cases
—Cause most frequently Retention in Uterine Cavity of Irritating Discharges, Retention being due to Uterine Distortion—Importance

of Drainage of Uterine Cavity—Fungous Condition of the Lining of the Body of the Uterus shown to be really Congestive Hypertrophy of the Mucous Membrane.

The terms endometritis, endocervicitis, have been employed to designate the condition of the lining membrane of the interior of the body of the uterus and of the cervix, respectively met with in cases of so-called inflammation of the uterus. And these affections (endometritis and endocervicitis) constitute for several gynæcologists of repute substantial, important, and independent diseases. The presence of pain, coupled with a copious discharge from the uterine cavity, is taken to imply that the affection is mainly endometritis, and, further, that it is a primary affection. But there are good grounds for disputing the accuracy of this view.

Endometritis does probably occur as a separate and distinct ailment. Thus, one of the effects of a severe chill is to set up a morbid condition of the lining of the uterus, which becomes irritated in common with the tissues of the uterus generally. The lining of the uterus may also be irritated and inflamed by various applications from without. And there is no doubt also that traumatic influences acting on the lining of the uterus—laceration by the point of the sound, for instance—may set up dangerous irritation. In the latter case, however, we have a real pyæmic process introduced. Apart from traumatic influences, it may be said that endometritis is, as a distinct disease, not by any means common.

The importance which "endometritis" holds in the estimation of some uterine pathologists necessitates a discussion in this place of the whole question. Those who, rejecting as unphilosophical and untrue, when tested clinically, the theory of all uterine maladies being situated at the cervix, and who have contended for the body of the uterus having a little more attention paid to it, have been themselves divided into two camps. Some have held that the tissues of the *walls of the body of the uterus* are affected with inflammation; others consider the *lining of the body of the uterus* to be the principal seat of the disorder.

I have all along expressed my agreement with those who, like Scanzoni, contend for the importance of the affections of the body of the uterus.

The absence of a free outlet for the uterine secretions is a fertile source of irritation of the uterine lining. Thus the

flexions of the uterus are causes of such irritation, leading, as they do so frequently, to a partial and valvular closure of the internal os uteri. The fluid collects in and distends the body of the uterus, is retained and becomes irritating.

Excessive discharge from the interior of the body of the uterus is in so many cases obviously connected with an obstruction at the internal os uteri leading to retention of the secretion within the uterus, that it is impossible to escape the conclusion that it is this obstruction which is responsible for the excessive secretions. Under the head of "Flexions" of the uterus this matter will require further development; but here I would state that the facts and the results of that special treatment for endometritis which is in favor with some practitioners equally fall in with this view of the case.

Accepting, therefore, the assertion—which is undeniable—that in certain cases the lining of the body of the uterus is in a disordered state, evidenced by purulent or offensive discharges therefrom; and, putting on one side cases of cancer, cases (very rare) of tuberculosis of the uterus, cases of gonorrhœa and syphilis, I continue to hold the opinion, expressed in the last edition of this work, that this disordered state of the lining of the body of the uterus is generally the result of retention of natural secretions and the irritation proceeding therefrom.

Any one who has treated cases of flexion of the uterus is familiar with the fact that the uterine body is frequently enlarged and distended by accumulation of fluid within it. This fluid escapes from time to time, but until this flexion is relieved the accumulation is apt to recur. When menstruation occurs under these circumstances the menstrual products are also apt to be detained in utero. The "period" is protracted and may be very painful. The retained products irritate the interior of the uterus, become broken up, mixed with further secreted watery fluid, and finally escape in gushes as a puriform fluid. Dysmenorrhœa, menorrhagia, leucorrhœa, are all symptoms which may be mixed up with such retention of fluid in utero, and therefore it is impossible to dissociate their consideration from the question of possible endometritis, and the possibly altered condition of the lining of the uterus must of course be considered in conjunction with these symptoms and their connection pointed out. In this place we are concerned

with the question as to the substantiality of endometritis as a distinct disease. It really appears to be, in the majority of cases, but an effect, an accident—so to speak—of other concomitant disorders of the uterus: important, no doubt, as an effect, but still an effect. Constituting indisputably a source of discomfort and giving rise to various symptoms, but not a primary condition in the proper sense of the word.

The key to the proper understanding of most of the cases of so-called endometritis is the due recognition of *the importance of drainage of the uterine cavity*. Provision must be made for escape of the secretions, and the conditions capable of producing retention of these products must be understood. When the uterus has a shape resembling that of a retort the circumstances are not favorable to free and easy drainage of its interior, and attentive observation of two or three cases of chronic flexions of the uterus, associated with so-called endometritis, will make it evident to the inquirer that the real relation subsisting between the bending of the uterus and the presence of fluid and profuse secretions from the uterine interior is one of cause and effect.

The analogy between puriform discharge from the uterus and chronic cystitis due to stricture of the urethra, is, so far as possible, complete. In both we have distention of a muscular organ to an unnatural degree with secreted products, irritation of the interior by the retained product, alterations of the fluid secreted, etc. The stricture of the urethra is analogous to the bend in the uterus—both obstruct excretion.

The various effects witnessed in cases of so-called endometritis are then explainable on the deficient drainage hypothesis. The view here expressed has been opposed and criticised in many quarters, but it is sufficient to examine the details of cases published with the endeavor to controvert these views, in order to obtain evidence corroborative of their accuracy. The endometritis theory of uterine disease has suggested the necessity of making applications of caustic or other materials to the interior of the uterus in order to get at the root of the supposed disease. This treatment has been found very serviceable in relieving patients of the symptoms which they presented. But the very process adopted of application to the interior of the uterus of the cauterizing agents, of necessity so alters the

shape of the uterus as to abolish for the time being the retention. The instruments inserted are generally nearly straight. The canal of the cervix is indeed sometimes artificially dilated in order more easily to apply the remedy, and by these means the flexion, which previously existed, is of necessity more or less destroyed. Thus one effect, at all events, is produced, viz., a complete and perfect drainage of the uterine interior. The patient is, we will suppose, cured after repetitions of this process; but now comes the question, How much of the cure depends on the straightening of the canal, with the consequent complete, if only temporary, drainage of the uterus, and how much on the internal cauterization?

One method of answering the question is by an examination of the results of treatment limited to the straightening of the uterine canal. It is the fact that these results are of the most satisfactory kind, and they undoubtedly prove that intra-uterine medication, so much insisted on as necessary for the cure of endometritis, is not required, and that the supposed good effects of it would be equally witnessed after more simple treatment.

The following remarks of Dr. Thomas in the last edition of his work (1880) on applications to the uterine cavity in cases of endometritis may here be quoted. Dr. Thomas says: "Enlarging experience during the past five years has led me to become skeptical as to the utility of the course. Observation and experience have so changed my own practice that I find myself very rarely resorting at present to applications above the os internum uteri. They very generally fail in curing the disease, and they are by no means void of danger."

And with regard to the effect of the "curette treatment for fungosities," he says, "in a great many cases he has had to repeat the operation of scraping about once a year for a long time" (p. 349).

Fungous Condition of the Lining of the Uterus.—It has been found in many cases of so-called endometritis that the mucous membrane lining the body of the uterus has presented a fungous condition. Under such circumstances there frequently occurs profuse losses of blood at the menstrual period and sanious leucorrhœa at other times. These fungosities have been frequently removed by the curette, and the roughened surface scraped away, thus removing the fungosities, and no doubt, in many instances,

with results which have been found encouraging to the further prosecution of this method of treatment.

These fungosities appear to consist essentially of the mucous lining of the uterus in a swollen hypertrophied condition, whereas they seem to have been treated as foreign bodies. In other words, they do not appear to be of a polypoid character or to resemble those growths which are liable to be met with in the interior of the uterus, and for which actual removal is the proper and the accepted method of treatment.

A short time since a case came under my notice which enabled me to make an observation which seems to have an important bearing on the question as to the cause and nature of the condition described as fungoid excrescence or growth of the lining membrane of the uterus.

The subject of this case was an unmarried lady, 42 years of age. Up to four years ago she had had moderately good health, though never strong. At that time—four years ago—she was one day in a sailing-boat on the sea for a few hours. She became violently sick, and felt something give way internally. She remained ill for some time, after being carried ashore, and shortly afterward she became the subject of severe losses of blood from the uterus. She was under medical treatment, and Dr. Gooding of Cheltenham diagnosticated anteversion of the uterus, for relief of which a pessary was employed. Two years before I saw her she came under the care of Dr. Milner Moore of Coventry, still suffering severely from hæmorrhages; after some little time he became convinced that a tumor of some kind occupied the fundus uteri. She improved under use of ergot, and wearing a Thomas pessary, but a year ago, the hæmorrhage being profuse, and the uterus considerably enlarged, he dilated the cervix, and found a growth which he thought polypoid, and by operation he removed a vascular sarcomatous growth from a broad space at the right portion of the fundus. Strong solution of perchloride of iron was applied. The treatment was of considerable service for a time, but latterly the symptoms had recurred.

On March 16, 1880, I saw the patient at Dr. Moore's request, Dr. Brockwell of Gipsy Hill assisting me in the management of the case. I found the patient excessively weak and much emaciated. She complained that the least movement or attempt to walk brought on bleeding and pain. Her appetite was gone and her sleep disturbed.

On examination I found the uterus acutely anteflexed, much congested, and the fundus the size of a cricket-ball, heavy, and tilted forward and downward; the cervix patulous and the tissues of the organ vascular and soft. The sound showed the uterus to be elongated, and by its means the organ was easily bent back to its proper shape, but it rather quickly resumed the anteflexed shape on withdrawal of the sound.

A pessary was introduced to sustain the fundus anteriorly. In a day or two the uterus, owing to its great weight, overcame the pessary and it was removed.

On March 19, a more complete examination of the interior of the uterus was made, and it was found practicable to pass the finger quite into the body of the uterus, the tissues of the organ being so relaxed. It was found that the surface of the body of the uterus presented just above the internal os considerable protruding growths, smooth, soft excrescences, the lower border very sharply defined at the internal os. And at that time it appeared to me probable that the growths, so prominent and distinct, were really of a sarcomatous nature. This being the opinion arrived at, it was decided to remove them by operation.

As preparatory to the operation, the patient was kept on her back. And every day the fundus was directed to be pushed up by the finger, and the anteversion thus as far as possible prevented, with the view of facilitating the subsequent operative procedure. Dr. Brockwell carefully carried out these manipulations.

The following is Dr. Brockwell's account: "On March 20, the day following your visit, the uterus was large, heavy, and the fundus pressing down on the neck of bladder, tender, and seemed to be wedged in, if I may say so, against the os pubis. I, in accordance with your instructions, passed the first and second fingers up to the fundus and made steady pressure for some minutes; slowly, and after considerable pressure, the organ yielded and slipped up into position. I then placed the patient on her back, with a large pillow under the hips, and kept her there till next day, when, on re-inserting my fingers, I found the uterus had only partially returned; it yielded much more easily than the day before. I again placed the patient on her back as before, and on the third day, although a little forward, the uterus had almost entirely lost its tenderness, was very much smaller, and very slight pressure sufficed. I

still kept her on the back, and on the fourth day I found the organ had retained its normal position and continued to do so till you came for the operation on the 31st, when, as you may remember, you found the uterus well in its place."

The proposed operation was delayed until twelve days later, and on March 31 the patient was placed under ether. On now examining the uterus with the finger it was found that the interior of the organ had undergone a very remarkable change during the twelve days' interval. The intumescence and projecting growths seemed to have almost disappeared—very markedly the projection just above the internal os had disappeared—and, in fact, there seemed to be little to remove. It was thought advisable, however, to scrape away with the curette the slight projection still remaining, and the surface was touched with nitric acid. Dr. Brockwell continued to maintain the uterus in its proper place by occasional pushing up of the fundus, and other ordinary measures, careful feeding, and use of injections, were employed. On April 16 the uterus was found to have returned almost to its proper size; the fundus was in fairly good position, and a cradle-pessary (rather large size) was inserted. The patient was wonderfully better, and on April 27 she was able to travel.

Remarks.—The condition of the patient was such as to give the impression of one suffering from malignant disease; and the result of the first examinations seemed to justify this view. The remarkable feature in the case was the rapid and almost complete disappearance of the growths from the interior of the uterus under the influence of rest, and the maintenance of the uterus in a proper position. There was no doubt left on my mind that the supposed growths were merely the congested hypertrophied mucous membrane of the uterus. For when the organ was so placed that its circulation became less embarrassed, this congestion and swelling subsided. The occurrence of severe bleeding on slight exertion was abundantly explained by the condition of the mucous membrane, for the exertion, producing greater flexion and greater obstruction to the circulation, intensified the congestion of the mucous membrane. The mere resting on the back and daily elevation of the fundus were then in this case found to have the remarkable curative effect on the lining of the uterus above described.

There is no doubt that the condition which I had found to be present resembled that observed by Dr. Milner Moore a year previously. The great emaciation, the great irritation, the profuse discharges, and the considerable tumor-like protrusions felt by the finger, seemed to favor the notion of a sarcomatous growth in the interior of the uterus. This notion was, of course, dispelled by the rapid subsidence of the growth which took place under observation.

The great vascularity of the lining of the uterus, which is proved to be ordinarily present during or just before menstruation, is no doubt in many cases intensified under various abnormal conditions. The lining of the uterus then becomes more swollen and soft, and the surface becoming broken down, as a part of the normal process of menstruation, the mucous membrane presents an irregular, villous, or shaggy aspect. The presence of such villous projections is probably indicative, then, not of new growth, or indeed necessarily of any abnormal growth, but is merely the result of extreme congestion of this mucous membrane. The condition in question would be appropriately termed "congestive hypertrophy" of the mucous lining of the body of the uterus.

The cause of the congestion which, in such cases as the above, determines the hypertrophy of the mucous membrane, may be different in different cases. In this particular instance the congestion seemed to be produced by the distortion of the organ. The acute anteflexion caused an impediment to the circulation, and hence general congestion, not only of the walls, but of the mucous lining.

It is a matter susceptible of easy clinical proof that the congested uterus is relieved by being placed in its proper position, and by restoration of its proper shape. I have many times observed this occurrence, but I never before had such unmistakable evidence placed before me of the effect of these mechanical restorative measures in reducing the congestive hypertrophy of the lining of the uterus.

The deductions to be drawn from the foregoing considerations in regard to the treatment of cases where we suspect or know of the existence of fungosities of the uterine mucous membrane are obvious.

For further information on the subject of the pathology and treatment of affections of the lining membrane of the uterus, the reader is referred to the chapters on Leucorrhœa and Menorrhagia.

CHAPTER XI.

ACUTE INFLAMMATION OF THE UTERUS.

Nature and Treatment.

Acute inflammation of the uterus is a rare event. But it is always a very serious one, generally dangerous, and fatal to a degree.

Idiopathically, it occurs so rarely that it can hardly be described, the materials being wanting. It has been said to occur from sudden suppression of the menstrual flow; but the possibility of its so being produced is doubtful, the cases thus described having been probably accidental effusion of blood into the peritoneal cavity, a phenomenon which is liable to be attended with very severe symptoms. It is also stated to have occurred in connection with gonorrhœa.

Traumatically, it is a well-recognized phenomenon. Wounds, or operations on the cervix or os uteri, use of tents for the purpose of dilating the cervix uteri, the incautious use of instruments such as intra-uterine pessaries, —these are the causes of this rare but serious event.

The affection appears to be essentially of the nature of pyæmia, attended with severe pain, a well-defined commencement, and a rapid course. There is almost invariably evidence of the absorption by the internal lining of the cervix or uterine canal of certain decomposing materials, which surface has been previously broken, injured, or bruised at some point. Its symptoms much resemble those of puerperal septicæmia.

A typical case occurs as follows: Within a few hours, sometimes within a few minutes, of the time of the absorption of the irritating agent by the uterus, the patient experiences an acute pain in the hypogastrium, concurrently with which she experiences a sharp and well-marked rigor, and a feeling of unmistakable and profound illness. The pulse instantly rises in frequency, running up in a few hours to 120 or 130 in the minute, the temperature also quickly attains a great height, 102° to 103° being noted within a few hours. The hypogastrium is acutely sensitive to the touch almost from the beginning; the patient lies with the knees drawn up, and shrinks before the slightest attempt to explore the state of the lower part of the abdomen. There may be nausea very shortly, or the nausea may be

delayed in its occurrence; nausea of an uncontrollable character is often observed the following day and persists until the fatal termination. The vagina becomes very hot to the touch, the uterus itself is felt swollen and sensitive to an extreme degree. Profuse perspiration, generally given as a symptom of pyæmia, has not been present in the cases of acute inflammation of the uterus which I have observed.

The further progress of the disease is marked by increase of frequency of pulse, temperature running up to 103° or even 107° , continued prostration, extension of the inflammation (generally) to the peritoneum, hurried respiration, great weakness of the pulse, and death, or passing of the disease into a less acute stage, and, possibly, the beginning of recovery.

The septicæmia thus occurring is perhaps the most rapid in its course of any of the known forms of this affection, probably owing to the great vascularity of the uterus, and the great rapidity with which absorption from its interior is liable to occur.

The pathological appearances after death are usually undue size and softness of the uterine tissues, and evidence of peritonitis on the external part of the organ, effusion of lymph and puriform fluid in the abdomen. In the uterine tissues themselves there may be little evidence of change.

Treatment.—The early administration of powerful stimulants, such as quinine, ether, alcohol, appears the best treatment to follow in a given case. These remedies must be given in large doses. Tincture of iron is probably also serviceable. Copious injections of hot water slightly carbolized should be given by the vagina. It appears to me probable that electricity, by which the contractions of the uterus could be excited, would be beneficial. A large linseed poultice with laudanum should be applied to the hypogastric region.

In cases of septic peritonitis following ovariectomy the lowering of the temperature by cold affusions to the head by means of the ice-bag, has proved in some cases of great service. There seems no reason why the same treatment should not be applied to the cases now under consideration.

CHAPTER XII.

DEFECTIVE DEVELOPMENT OF THE UTERUS—CONGENITAL MALFORMATIONS.

DIAGNOSIS.

LIST OF CASES.—Absence of Rudimentary Formations of the Uterus—Infantile Uterus—Uterus Unicornis—Double Uterus—Absence of the Os Uteri.

DIAGNOSIS.—The diagnosis of the various forms of irregularity of development of the uterus is important. Associated as these defects usually are with alterations or defects in the formation of the vagina, it is convenient to consider their diagnosis together. In the chapter on Diseases of the Vagina detailed directions for such investigation will be found.

At University College Hospital, in a period of about five years, six cases of congenital malformation occurred out of about 1,200 cases. The absolute frequency of these malformations is of course not to be gathered from these statistics, as the conditions might have existed in other instances not examined.

*Abstract Account of Cases of Imperfect Development of Uterus.
University College Hospital.*

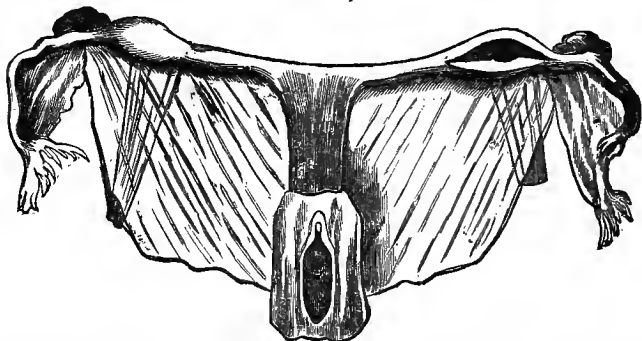
Age.	Initials.	Married or Single.	No. of Children.	Remarks.
18	L. J.....	S.	—	A very slight show at æt. 15 for 1 day. Nothing since. Uterus small. Half an inch too short. Molimen slight.
21	E. J.....	S.	—	No menstruation. Uterus measures 1 inch only in length.
22	E. H.....	M.	—	No menstruation. Uterus a little shorter than normal. Has a sister in same state.
26	E. J. B...	M.	o	Married 2 years. Menstruation almost <i>nil</i> . A spot or two occasionally. Uterus appears to have a <i>double</i> cavity, but a single os.
28	Mrs. D...	M.	o	Married 4 years. No catamenia. Uterus only half an inch long.
30	M. W.....	S.	—	No menstruation. No evidence of action of ovaries. Uterus size of a pea. Vagina half natural length. Breasts undeveloped. Cords can be felt in situation of Fallopian tubes <i>per rectum</i> .

The following are the chief varieties of defective development of the uterus:

ABSENCE OR RUDIMENTARY FORMATION OF THE UTERUS.

Cases of entire absence of the uterus are of extreme rarity, and there are good reasons for believing that when apparently absent the organ is yet represented by imperfect yet—to the anatomist—recognizable traces of a structure having the outline and general arrangement of the uterus. The ovaries—the essential portions of the female generative organs—are observed to be present in cases where the uterus is represented by mere traces of muscular fibres and cellular tissue only. A type of the condition here alluded to is a

FIG. 27.



case recorded by Rokitansky,* in which the vagina consisted of a fossa one inch long, the uterus represented by muscular fibres arranged in the form of the uterus, the Fallopian tubes more decidedly pronounced and presenting each a small cavity, the ovaries present (Fig. 27).

The particular part of the uterus formed may be limited chiefly to the cervix, to the upper part, or to one side.

Absence or rudimentary formation of the uterus may be associated with complete absence of the vagina, or with rudimentary formation of this canal. With respect to the condition of the vagina in such cases, the following is an illustrative fact: I had occasion a few years since to examine

* See Kussmaul's valuable work, "Von dem Mangel, der Verkümmern und Verdopplung der Gebärmutter," Würzburg, 1859, p. 20.

a lady æt. 20, presenting the following conditions; pudendum covered with hair, labia majora well developed, vagina represented by a mere little pit admitting the uterine sound only half an inch, no uterus or hard body to be discovered between the bladder and rectum high up. Signs of ovarian activity had been observed on two or three occasions, giving reasons for the belief that the ovaries were present. The breasts were well developed.

INFANTILE UTERUS.

Under this term are included those cases in which the uterus is regularly formed, and, so far, complete in its parts, but where it retains during adult age the size the uterus ordinarily possesses during early childhood, or prior to the event of puberty. At the age when the arrival of puberty is generally witnessed, the growth of the uterus proceeds rapidly, the dimensions which it then acquires being those which, with certain exceptions, it retains until the end of what may be termed sexual life. But in a few instances, when the age of puberty arrives, the uterus fails to develop, and retains its child-like size far beyond the customary period. In such cases menstruation does not usually occur, although the patient may present signs of ovarian functional activity. Various degrees of this defective development of the uterus are observed, all, however, associated with one symptom, viz., amenorrhœa or imperfect menstruation. In some instances the condition primarily at fault is congenital, while in others it appears to be connected with malnutrition at the critical period of the arrival of puberty.

A sufficiently typical instance of the infantile uterus is that of a young woman who was under my care at University College Hospital. Her age was 22; she had never menstruated, the external generative organs and the breasts well developed, the uterus slender, two inches long as measured by the uterine sound, the vaginal portion of the cervix slight, the os uteri exceedingly small. This patient began to suffer from symptoms indicative of ovarian activity at the age of sixteen, but menstruation had never actually occurred. Several cases of infantile uterus will be found recorded in Kussmaul's work. Very numerous variations are met with. Thus the body of the uterus may be imperforate, or the uterus may have two cornua instead of being a single organ, or the imperfect development may only exist as regards the cervical portion.

Further, the history of certain recorded cases renders it evident that the infantile uterus may undergo at a very late period the ordinary development, and also that, although in by far the majority of cases the subjects of this condition are destitute of the power of conception, yet that the contrary may be observed. The breasts are generally small; the external generative organs, the labia, clitoris, and vagina, also smaller than usual; the pudendum is, as a rule, imperfectly covered with hair. The individual, as a rule, is stunted as regards size and development of the body generally, but by no means always so. The ovaries have been found quite absent, but this is generally not the case;

FIG. 28. -



the ovaries also contain Graafian follicles, and the menstrual molima are more or less well marked, although the menstrual discharge is almost always entirely absent. Sexual desire is frequently, but not always, found wanting.*

UTERUS UNICORNIS.

Under this term are included those cases in which the uterus presents a division superiorly into two parts or cornua, one of which is more developed and larger than the other. There are several varieties in reference to the relative size of the two cornua in different cases, and obviously when the two cornua are nearly alike in point of size the term "unicornis" is not applicable. In Kussmaul's cele-

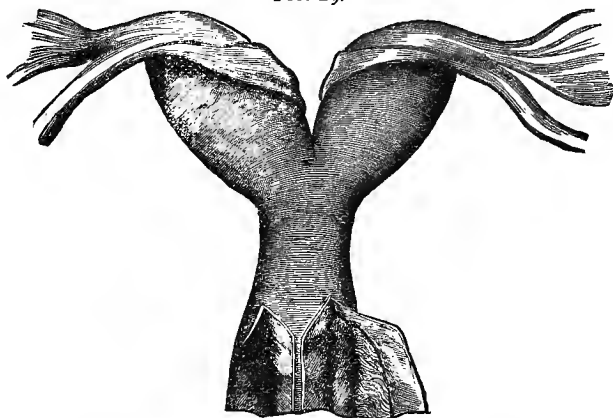
* Kussmaul, *op. cit.* p. 94.

brated work all these varieties will be found described together with various exceedingly interesting facts relative to the history of pregnancy under these unusual circumstances. The second cornu is always present, although it may be exceedingly small. A typical case of the uterus unicornis is that recorded by Pole.* (See Fig. 28. The uterus is here seen from behind.)

DOUBLE UTERUS.

The several varieties of the double or bipartite uterus are, as is the case in other instances of malformation, traceable

FIG. 29.



to arrest of development in early foetal life, and with reference to all of them it may be said that they represent what is a normal and persistent condition of the uterus in inferior orders of mammalia.

A most complete separation of the two parts of the uterus is sometimes witnessed, each side representing a separate cavity opening below by a separate orifice into a distinct and separate vagina, each vagina presenting externally a distinct orifice. This condition is very rare.

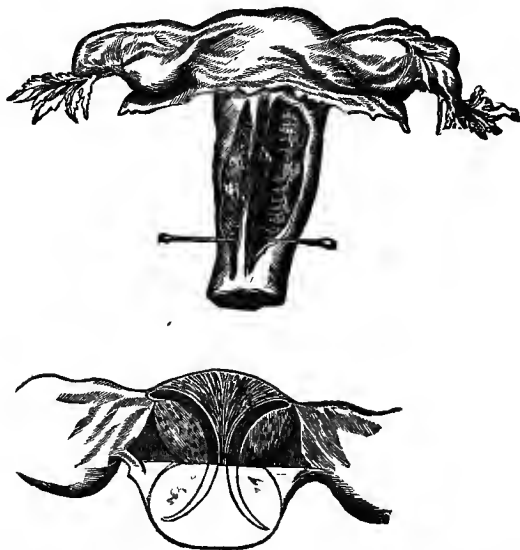
The next variety—the uterus duplex bicornis—is well

* "Memoirs of Med. Soc. of Lond.," 1794, p. 507, and Kussmaul, *op. cit.* p. 22.

illustrated by a case recorded by Schroeder* (see Fig. 29). The two halves of the uterus are here—externally—connected, but the two cavities are completely distinct.

Here it may be stated that the division between the proper cavity of the uterus and the Fallopian tube is always decided by the position of the round ligament. Unless this be attended to, there would be a liability of confounding the uterus bicornis with the more completely and distinctly double uterus.

FIG. 30.



Following Kussmaul's arrangement, another variety is that in which the uterus appears externally of the normal form, the cavity being, however, completely divided into two by a septum running down the middle. This Kussmaul terms the "uterus duplex omnino conjunctus vel u. septus." Rokitsansky's "uterus bilocularis" (Fig. 30) is from a case of Liepmann's,† and was taken from a girl æt.

* From Kussmaul, p. 25. In the same work, p. 197, will be found a drawing from a case of Carus, in which one uterus is occupied by a foetus.

† See Kussmaul, *op. cit.* p. 26.

19. The vagina was in this case double, as also the uterus, although there is no indication of this externally. The vaginal canals are laid open from behind.

There are yet further modifications. Thus, the septum between the two sides of the uterus may only extend half way down the uterus, in which case there is only one os uteri, while the cavity superiorly is double ("uterus subseptus"), or again the uterus may be single at the cervix, and completely double above that point, constituting the "uterus bicornis unicollis." Instances of these two varieties are given by Kussmaul.

Lastly, a case of Eisenmann's may be referred to which stands, as Kussmaul remarks, midway between the uterus bicornis and the uterus septus: here the uterus is distinctly double, as also the vagina, the two uteri are quite parallel, and the two cavities long and narrow. A groove marks externally the division between them.

Some remarks on the *treatment* of cases of imperfect development of the uterus will be found in the chapter on Amenorrhœa.

ABSENCE OF ORIFICE OF OS UTERI.

This is another congenital malformation which is met with but rarely. The aperture at the lower extremity of the cervix uteri (os uteri externum) may be absent, or the canal may be imperforate higher up. In either case there may occur an accumulation of menstrual fluid when puberty arrives. This condition may be associated or not with an imperforate vagina or with absence of the latter canal.

CHAPTER XIII.

DISPLACEMENTS, DISTORTIONS (FLEXIONS), OF THE UTERUS —I. NORMAL SHAPE, POSITION, AND MOVEMENTS OF THE UTERUS.

NORMAL SHAPE, POSITION, AND MOVEMENTS OF THE UTERUS.—Form and Shape, how preserved in a State of Health—The Proper Position of the Uterus: Discussion of various Opinions on the Subject: Schultze, Schroeder, De Warker, etc.—Conclusion arrived at—Normal Movements of the Uterus—Degree of Fixation of the Uterus—Motions de-

scribed: 1, Descent; 2, Rotation on Transverse Axis; 3, Flexion—Effect of Evacuation of Contents of Bladder considered.

THE NORMAL SHAPE OF THE UTERUS.

The uterus may be said to consist of two parts: the body, or uterus proper, and the cervix; the general shape of the organ being somewhat that of a pear. The body of the uterus is a little less rounded posteriorly than anteriorly. The junction between the body of the uterus and the cervix is not indicated by the external outline. The width of the body of the uterus is greater than its antero-posterior measurement, one result of which is that the cavity of the uterus proper has a somewhat triangular shape. The thickness of the walls of the body and of the cervix are, when the uterus is unimpregnated, and in a state of health, such that the cubical space comprised by its cavities is very small, the body of the uterus presenting a cavity wide from side to side, but with its anterior wall almost in contact with the posterior, and the cervical cavity being a tube, somewhat fusiform in shape, becoming narrow above where it opens into the uterine cavity proper (internal os uteri), and narrow also below where it constitutes the external os uteri.

The general shape of the uterus is pyriform, as already stated, but it is generally considered that in its normal healthy state the axis of the uterus is not quite straight, but that it is a little bent, so as to present a slight concavity on its anterior aspect. This is what is termed the natural anterior curvature of the uterus. It appears that before puberty this anterior curvature is more decidedly marked, but that when puberty arrives and the uterus undergoes its full development, the anterior curvature is, in part at least, lost. It seems, further, certain that in some few cases the pre-pubertal degree of anterior curvature is continued for a longer time than usual, especially when circumstances are adverse to healthy development and growth of the body generally. The presence of slight anterior curvature after puberty has been reached is a matter of considerable importance in discussion of the question as to how far ante-flexion of the uterus is a disease or not, and it has over and over again been used as an argument on the negative side. A correct understanding on this subject is therefore important. There is no doubt in my own mind that a slight anterior curvature is normal, when the uterus has reached its full healthy development. It is, however, as absurd and

illogical as it appears unpractical to assume that a slight anterior curvature of the uterus is normal, no excess in the degree of anterior curvature can be abnormal; and yet the argument has been strained to even this extent.

In Fig. 31 is represented what I consider to be the normal degree of anterior curvature in the multiparous uterus, the patient being supposed to be in the standing position.

It cannot for a moment be doubted that in a state of health the uterus has a certain standard of form, departures from which are to be regarded as abnormal. The various organs of the human body have the form and structure assigned to them which are designed to adapt them to their several uses. It would be strange if the uterus were an exception to this. *A priori* reasoning alone would lead us to the conclusion that the uterus is, when possessed of its natural form, better adapted for its purposes than when distorted; as a matter of fact clinical experience shows that when it has lost its natural form grave inconveniences, disturbance of important functions, dysmenorrhœa, sterility, etc., generally result.

It is necessary to consider for a moment the arrangements nature has provided for the preservation of the form of the uterus. The most important of these is the rigidity of the uterus itself, a quality conferred upon it by the density of its structure. When the unimpregnated uterus is in a state of health it may be practically considered as an almost solid body, for the cavities within are small and detract little from its solidity. "The inherent strength and resistance of the proper tissue of the organ" are, as Dr. Thomas remarks, the chief safeguard against bending of the uterus. The tissues of the uterus have naturally a hardness and firmness much greater than that of ordinary muscle. It is this hardness and firmness which secure the permanency of the shape of the uterus. The uterus in a state of health may be likened to a solid pear-shaped mass of india-rubber, which preserves its shape by reason of its solidity, and which returns to its shape when slightly bent by reason of its elasticity. But the pliability is not so great as in the case of india-rubber, nor is the elasticity so considerable. These considerations are very important in reference to the causation of flexions. In a former chapter abnormal softness of the uterus has been described as a pathological condition; the foregoing considerations render it evident how softness of the uterine walls would take away

from the uterus that rigidity and firmness on which it has to rely for the preservation of its natural form and shape.

It does not appear that the attachments and ligaments of the uterus aid materially in maintaining its proper shape, though of course they affect its position. The chief attachments of the uterus are at the middle portion, the two extremities of the organ being left comparatively free. The attachments of the uterus are indeed such that they rather detract from than add to its rigidity, and they do not certainly materially increase its rigidity as a whole. The axis of suspension of the uterus is a straight line passing transversely across the middle of the organ. The two poles of the uterus are free to move as compared with the central portion; and the condition of the fundus, poised as it were, and free from anterior or posterior attachment, gives it an instability which is not favorable to the preservation of the proper shape. The same holds good in reference to the vaginal portion of the cervix, which presents a conical protuberance into the vaginal canal and is likewise free and likely to be acted on by disturbing mechanical agencies.

NORMAL POSITION OF THE UTERUS.

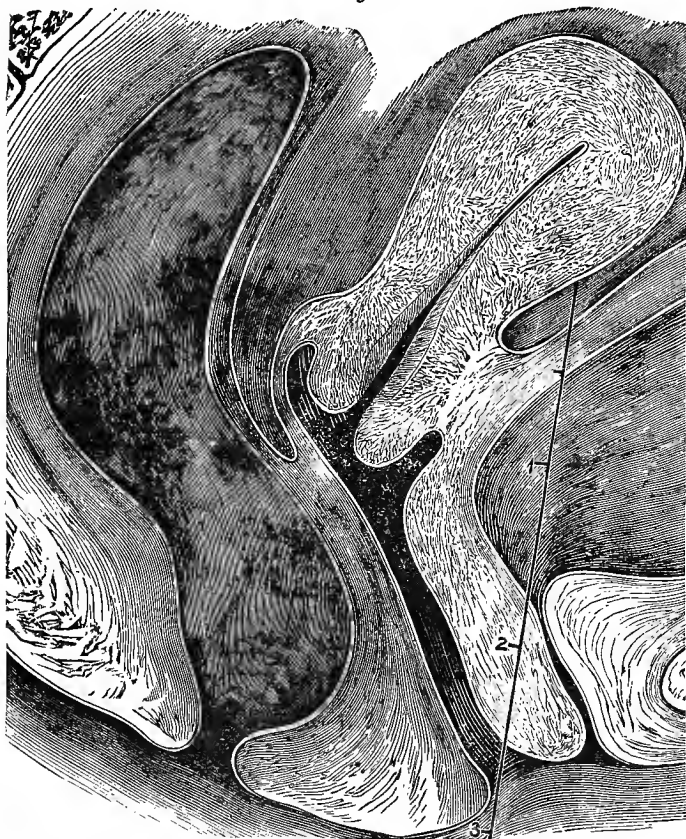
Many disputed questions hinge on the determination of what is the normal position of the uterus. It might be considered that it is easy to determine this elementary point, but nevertheless it is one on which there are grave differences of opinion. In an exhaustive essay "On the Normal Position and Movements of the Unimpregnated Uterus," by Dr. Ely Van de Warker,* the subject has been recently discussed and a *résumé* given of the opinions of various authorities on the subject. In Germany, particularly, Kohlrausch, Braune, Schroeder, Schultze, and Martin have expressed views on the subject of a conflicting character.

Dr. Van de Warker, rightly, it seems to me, affirms that the actual position of the organ in the living must be studied in the living. If post-mortem sections are appealed to great care should be taken to avoid sources of error. An instance of the necessity for this caution is afforded by the Atlas of Braune, in which the section of a frozen subject (a young woman) is given, and shows the position of the uterus (in the early gravid state) in the pelvis. On first looking at the plate it appeared to me that the lower part of the uterus

* "American Journal of Obstetrics," vol. xi. p. 314.

was represented unusually low down in the pelvis, and on referring to the text I found it stated that the subject in question was a woman who had died from hanging. The mode of death was evidently the cause of the extremely low

FIG. 31.



position of the os uteri, of the urethra, and of the vaginal aperture. And yet this plate has apparently been taken by some authorities as a guide to the normal position of the uterus. Schroeder appears to have been influenced by this particular plate, for a line drawn from the under part of the

pubes to the tip of the coccyx passes through the uterine cervix in the drawing which he gives as representing the *normal* position of the uterus. Schultze criticises this position, and Schroeder defends it by appealing to Braune as an authority!

As regards the proper position of the uterus, there are two questions to be decided—one as to the position of the uterus in the pelvis in relation to the brim and outlet; the other as to its relation to the anterior and posterior walls of the pelvis.

The idea that I have been led to form from actual observation is that under normal circumstances the uterus occupies a nearly median position in the pelvis—that is to say, that the top of the fundus either corresponds to or is just below the plane of the brim, and that the os uteri is just a little above the plane of the outlet (pubo-coccygeal line); also that it is placed in the pelvis about equidistant from the pubic bones and the middle of the sacrum. The position of the uterus as just described corresponds to what is termed the curve of Carus, and it appears to me that the uterus does in a state of health occupy this position, subject to certain disturbances which will be presently alluded to in connection with the question as to the natural movements of the uterus. Reference to the accompanying drawing (life-size), which represents what I consider to be the typical position of the os uteri on a sectional lateral view, will render this statement intelligible. The drawing has been carefully made on the basis of one by Kohlrausch, but in some respects a little altered from this author's figure.

In the drawing (Fig. 31) the bladder is represented as being full. It is probable that when the bladder is empty the upper part or body of the uterus is a little nearer the pubes than as above shown. This point will be presently further enlarged upon.

The above view as to the normal position of the uterus is not the one entertained by Schultze or Schroeder, or Van de Warker. Schroeder places the uterus as a whole lower in the pelvis. Schultze places the os uteri in about the same position, but gives the body of the uterus a much greater inclination forward. Van de Warker simply adopts Schultze's view of the subject. Schultze, followed by Van de Warker, contends that the uterine body becomes anteverted as the bladder is emptied (Fig. 32), and assumes a more upright position when it is full. Such is not the conclusion my ob-

servations have led me to form. It appears to me that the space created between the uterine body and the symphysis pubis by the evacuation of the bladder is normally filled by the descent of the intestines upon the bladder, and that the uterus, when in a state of health, remains, as a rule, comparatively unaffected by emptying the bladder. Schultze's experiment on living subjects appeared to him to show that when the bladder is empty the uterus follows it, but we have no proof that the experiments were performed on subjects really in a state of health, and they are opposed to the results of my own observations. Martin expresses his opinion as adverse to that of Schultze also in respect to this supposed version of the uterus on emptying the bladder. The notion of anteversion being natural is favored by the circumstance that there is a slight natural anterior curvature. It is also favored by the circumstance that what I should term *abnormal* anteversion and flexion are common, as will be by-and-by explained. My own observations have led me to the conclusion that when the body of the uterus persistently occupies a position such as would be considered natural by certain of the authorities above cited, symptoms of a troublesome character are always observed and indicate the abnormality of the position the uterus occupies.

In conclusion, after comparing various opinions and testing them by the results of personal observation, my opinion is that, in a state of health, the unimpregnated uterus has a nearly median position in the pelvis; that it is incorrect to imagine that the fundus, in a state of health, encroaches materially on the space devoted to the bladder; and that it is incorrect to suppose that, in a state of health, the os uteri is so low down as to rest on the floor of the pelvis.

THE NORMAL MOVEMENTS OF THE UTERUS.

The uterus is suspended in the pelvis by the various ligaments and attachments already described. If we imagine a line drawn horizontally from side to side, passing through the middle of the uterus, this would represent what has been termed the axis of suspension of the uterus. This axis of suspension is not rigid; but in health the uterus has a tendency to come back to this position when removed from it. The effect is, that the upper part of the uterus, as well as its lower part, is more movable than the centre. A rotatory movement to a limited extent, backward or forward, may be readily made on this imaginary axis of suspension,

and when we come to examine the *abnormal* movements of the uterus, this rotatory motion will be shown to be a very important element in the consideration.*

The fixture of the uterus is such that a certain degree of freedom of movement is allowed, and there can be no doubt that within this range movement does habitually occur. We have now to determine what this normal range of movement is. The ligaments and attachments of the uterus limit its motion. Anteriorly the uterus has attachments of an extensive character to the bladder, and through the bladder and its peritoneal investment, to the abdominal wall in front; this attachment is such that it generally prevents the uterus as a whole from moving directly backward: if the bladder be much distended it is at first pushed backward, and if the distension become still greater a tilting of the body of the uterus backward results.

Behind the uterus we find the sacro-uterine ligaments, one on each side, near the middle line. These vary very much in strength in different cases, according to my observation. In some cases they are hardly recognizable by the touch. In others they are firm bands. They tend to prevent motion of the middle part of the uterus forward, and together with the utero-vesico-pubic attachments they secure for the uterus a median position between the sacrum and the pubic bones. But they do not affect the fundus uteri or the os uteri except in an indirect manner. The utero-sacral ligaments control also descent of the uterus, and tend to prevent the uterus as a whole from moving down on to the floor of the pelvis or toward the vaginal aperture.

The broad ligaments of the uterus, including the cellular tissue enclosed in their layers and surrounding the plexus

* On this subject reference may again be made to the Essay of Dr. Van de Warker already quoted. In a previous essay, published in 1875, this author gives results of observations on the normal movements of the uterus, made by means of an india-rubber bag distended with water, and communicating by a tube with a column of mercury. His inquiries were made to determine the effect of expulsive efforts made in various positions of the body. It was found that descent of the uterus (indicated by the instrument), produced by expulsive effort, was much greater in the standing than in the sitting position, the difference being equal to $\frac{5}{10}$ inch of mercury. It was also found that the difference produced by mere position, without expulsive action, between standing and sitting (due to superincumbent visceral pressure) was represented by $\frac{2}{10}$ inch of mercury. The squatting position, according to these experiments, gave, next to the actual lying-down position, the least amount of pressure on the uterus.

of vessels which lie laterally to the uterus within the layers of the broad ligaments, have the important effect of preventing lateral movements of the uterus; they secure, or help to secure, the position of the uterus in the middle line of the body; they also tend very much to prevent descent of the uterus as a whole, and they appear to be in fact the chief means by which the uterus is suspended in the pelvic cavity.

The round ligaments of the uterus have been lately made the subject of inquiry by Martin and Lieberkuhn (quoted by Vande Warker *loc. cit.*). The round ligaments contain smooth and striped muscular fibres, the smooth ones attached to the uterus on its antero-lateral aspect on each side. The striped muscular fibres are inserted by tendinous and fleshy terminations into the aponeurosis of the internal oblique muscle, the outer ring at its upper and under side, while the smooth fibres pass through the inguinal ring to the connective tissue on the mons Veneris. The round ligaments are stated by Rainey to increase in size during pregnancy. Martin believes that the striped fibres raise the fundus toward the pubes and further the process of insemination. It seems probable that the round ligaments may have a certain effect in tending to prevent the movement of the fundus uteri backward.

The vagina is to be considered as one means of support to the uterus, and thus to prevent motion downward. Here it is necessary to point out that when we speak of the vagina, we include really the cellular tissue round the vagina and the processes of cellular tissue by which the vagina itself is fixed. In a very interesting paper, Mr. D. B. Hart, M.B., has recently discussed the question of the normal support of the uterus.* He points out that the vagina has no side walls, that it is a slit parallel to the pelvic brim, and that it constitutes a pelvic diaphragm, the floor and roof being in apposition, and the uterus being set at about a right angle to this diaphragm. It is this diaphragm which acts, according to Mr. Hart, as the chief support of the uterus. He enforces his argument by appeal to the sections of frozen specimens such as those of Braune. According to this view, the perineum is a most important

* "A Study of two Mesial-vertical Sections of the Female Pelvis in Relation to the Normal Support of the Uterus and Prolapsus Uteri." By D. B. Hart, M.B., Obst. Soc. of Edin., Feb., 1879.

part of the support of the uterus, because, if it be partly or wholly destroyed, the anterior part of the vaginal wall slips over the posterior, the bladder descends, and the uterus follows it. These arguments are in substance sound, and they appear to be especially applicable in regard to the etiology of what may be termed external prolapsus. The experiments performed by Dr. Savage* some time ago are confirmatory of the idea that the general cellular tissue of the pelvis is exceedingly important as a means of holding the uterus in position and preventing descent.

Reviewing the whole subject of the attachments of the uterus, it becomes evident that the uterus is held in its place mainly by what may be termed the close packing of the pelvic contents, by the framework of the vagina, the framework of the bladder, and the broad ligaments, and by the vessels, the cellular tissue surrounding the vessels, by certain strengthening fibres in various positions, and in a most important degree, by the perineal structures. The attachments are such that no considerable motion is easily permitted when the pelvic contents are in a state of health. When the perineum is not intact, as is frequently the case in women who have borne children, an important safeguard is removed. In the chapter on Prolapsus this part of the subject will be again considered.

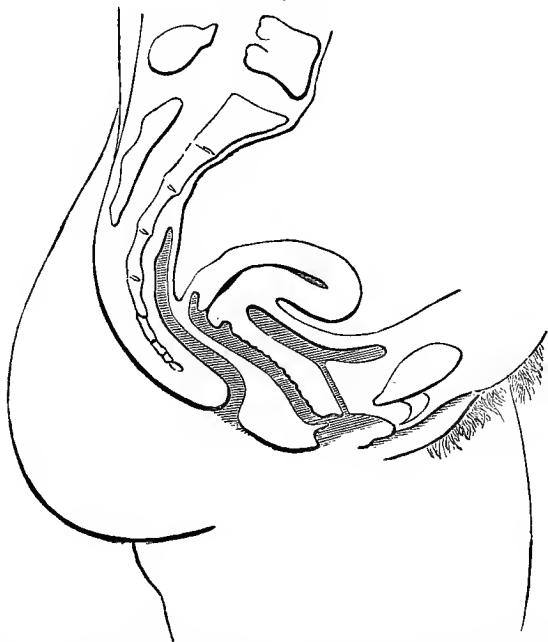
The motions of the uterus may be described as follows: It has an upward motion and a downward motion, very little lateral motion, but more anterior or posterior motion. It would be probably correct to say that, *in a state of health*, the range of upward and downward motion does not exceed two inches, while the range of anterior and posterior motion is generally not more than one inch and a half. The extent of lateral motion is probably one inch.

But the motion of the uterus is not a simple motion. The uterus being fixed chiefly at its middle part, when any force begins to act upon it a compound motion results. Thus the uterus, when pushed downward, as in the act of straining, does not retain its longitudinal axis in the same position, but it may be tilted to a certain degree at the same time. Thus the uterus may descend as a whole, but the upper part of it may descend more than the middle part. In such a case we have descent, together with what has been termed "version," but which would be more cor-

* "Illustrations of the Surgery of the Female Sexual Organs."

rectly designated "rotation" (on its transverse axis of suspension). But there arises a further complication. If the uterus were a solid rod, the axis of the organ would be always the same, though it would not be always in the same place. But inasmuch as the uterus is in a certain degree a pliable body, it is liable to be bent and the shape of its axis changed. We thus have three kinds of motion

FIG. 32.*



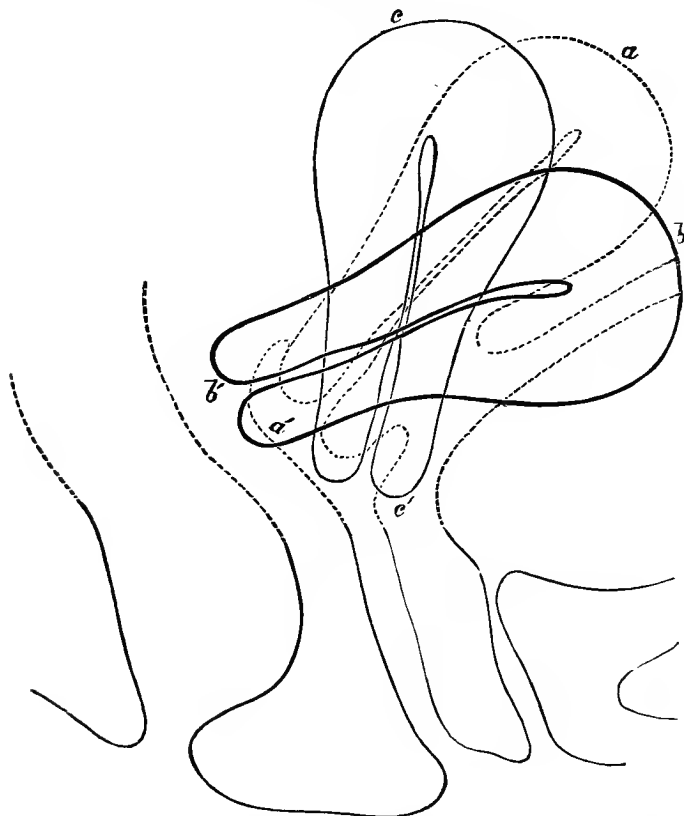
possible. For instance, there may be—1. Movement downward. 2. Tilting of the uterus (version, or, as above suggested, more properly "rotation") on the transverse axis. 3. Bending or flexion of the uterus.

In the accurate estimate of this conjunction of motions we have the basis for the true pathology of uterine flexions and displacements. The natural movements of the uterus

* Fig. 32, copied from Schultze, represents his notion as to the condition of the uterus when the bladder is empty.

are usually complicated, as above described, descent directly downward, for instance, being less common than downward descent together with a little rotation (version)

FIG. 33.*



and a little flexion. When the uterus is in a state of health it quickly returns to its normal position as soon as the application of the moving force ceases, and there is little doubt that these slight oscillations habitually occur during

* Fig. 33 represents the normal range of motion of the uterus.

changes of position of the body, during exercise, during the natural expulsive efforts, etc.

The particular motion of the uterus about which there does not appear to be uniformity of opinion is that connected with evacuation of the contents of the bladder. It is the opinion of some, as already stated at p. 166, that the body of the uterus habitually falls or moves forward as the urine escapes from the bladder, and that this anteversion and flexion of the uterus is a perpetually recurring event. I believe this opinion to be incorrect. It is possible there may be a slight tilting or rotatory movement forward when the bladder becomes emptied, but the descent of the top of the fundus uteri, under such circumstances, does not in a state of health, according to my observation, exceed half an inch in amount, whereas, according to Schultze's (see Fig. 32), the top of the fundus descends as much as two inches, or even more, on complete evacuation of the vesical contents.

When the bladder is rather fuller the uterus as a whole may be pushed backward a little without being bent, and when the rectum is very much distended, the uterus may as a whole be pushed forward. When expulsive efforts are made, it is obvious that the result will be different according to the condition of the rectum and bladder. If both are in a medium state of fulness the uterus will be made to descend toward the floor of the pelvis, and the posterior part of the vagina will descend with it. There may be little rotation (version) or flexion under such circumstances. When the bladder is very full the expulsive effort may, as has been shown by experiments performed by Dr. Braxton Hicks, result in a retroversion of the uterus. Not long since I had under my care a young lady suffering from retroversion and flexion, which was certainly due to long-continued retention of urine during a long railway journey. When the bladder is not distended the expulsive effort projects the uterus downward and at the same time may produce extreme anteversion. These are of course extreme events, and they are here mentioned because there can be little doubt that they are only exaggerations of what probably happens every day, but to a much less degree, and when also the uterus and its surroundings are in a state of health. The accompanying drawing (Fig. 33) exhibits what may be described as the normal extent of the motions of the healthy uterus. *a a'* shows the position of the

uterus in a state of rest; $b\ b'$ shows the degree of anterior tilting (or rotation) which occurs under various circumstances—emptying of the bladder, etc.; and $c\ c'$ shows the degree of posterior rotation which may occur. It will be observed that in anterior rotation the os is carried backward, whereas in posterior rotation the os is carried forward. Moreover, in both the latter cases the os is seen to be rather lower than usual in the pelvis.

CHAPTER XIV.

DISPLACEMENTS, DISTORTIONS (FLEXIONS), OF THE UTERUS.

—2. PATHOLOGY AND GENERAL HISTORY.

Nomenclature—Flexion, Distortion, Version, Prolapsus—Complex nature of Cases—Frequency of Distortions and Displacements—Statistics from Author's Hospital Practice—Statistics from Private Practice.

NOMENCLATURE.—When the uterus is bent upon itself it is said to be *flexed*, and when the flexion, passing beyond the normal limit, has become chronic the malady is a *distortion* of the uterus. When the alteration of shape is known to have occurred *after* puberty, or thereabouts, the affection is properly spoken of as a distortion. Malformations of the uterus are congenital. Occasionally it is rather difficult to distinguish a malformation from a distortion of the uterus.

By *version of the uterus* (*rotation* backward or forward on the transverse axis) is meant an inclination of the organ forward, backward, or to the side, as the case may be, constituting *anteversion*, *retroversion*, *lateriversion* (*right* or *left*).

It is very generally the case that *version of the uterus* is *conjoined with flexion* of the organ, though in some cases the axis of the uterus is actually undisturbed, and there is version pure and simple.

Another result generally occurs, viz., that there is a certain degree, often a very great degree, of *displacement of the uterus*, conjoined with the distortion. Flexion of the uterus necessarily implies a degree of displacement of the body of the uterus, or of the cervix. Thus, in a case of retroflexion the fundus uteri is relatively much lower in the pelvis than in the healthy uterus, and it is thus "displaced." But there are two distinct kinds of displacement. Thus, sometimes we find the uterus as a whole not materially dis-

placed from its proper position in the pelvis, but certain parts of it are removed from their proper place. More often, however, it is the fact that there is both a relative and a general displacement of the uterus. Nothing is more common, indeed it is the rule, to which there are exceptions, to find considerable descent of the uterus in the pelvis, conjoined with marked distortion.

The word *prolapsus* is used rather widely. By some it is restricted to cases where the uterus is only partially protruded, the term *procidencia* being employed to designate complete extrusion of the uterus. Using the term prolapsus in its widest sense, we find prolapsus associated very frequently indeed with distortion of the uterus, and this applies both to cases where the prolapsus is slight in degree, or so severe as to amount to procidencia.

Numerous figures, illustrative of the above remarks, will be found in the succeeding chapters.

COMPLEX NATURE OF CASES.—From the foregoing remarks it will be evident that there are a multitude of complications possible, and as a fact it is very rare to meet with any one of the conditions, version, flexion, or prolapsus of the uterus in a simple and unmixed form.

This is a point of considerable importance, for it is impossible, unless it is duly regarded, to make any advance in knowledge of the subject. Cases as they are met with in practice are generally complex: they are as a rule complex in more than one sense of the word. The complexity is not merely a mechanical one—there are also various vital or functional disturbances entering into and complicating almost every case. Thus, flexions and displacements of the uterus are almost invariably only a part, though a very important part, of the affection. The condition of the general health, the condition of the uterine tissues, are qualities liable to vary exceedingly in different cases, and when we consider the number of possible varieties in the shape and position of the uterus, it is evident that the number of possible complications is almost endless. Thus, to say that a particular patient is affected with an ante flexion of the uterus is to convey very little actual information; the case may be trifling in importance, or it may be serious; it may be safely left to itself, or it may require much and skilful attention to be remedied. We should require to know the history of the case, the precise degree of the ante flexion, the precise position of the uterus as a whole in the pelvis,

the physical condition of the tissues of the uterus, the size and thickness of its walls; and, in forming a due estimate of the case, the general condition and activity of the nutritive process would form a very essential element.

FREQUENCY OF DISTORTIONS AND DISPLACEMENTS OF THE UTERUS.—It is a matter of considerable interest to determine the actual frequency with which these disorders of the uterus are met with in practice. The following is a contribution on this subject from my own experience:

During a period of a little over four years, from August, 1865, to December, 1869, I kept notes of all cases treated in my out-patients' room at University College Hospital. The number of recorded cases of all kinds is 1,205.* Of these, 714 presented uterine symptoms. Of these 714, 620 were subjected to an internal examination, and the diagnosis thus arrived at. In 94 no such examination was made.

Of the 620 examined cases, 61, or 9.8 per cent, were set down as suffering from absence or malformation of uterus, or various symptomatic affections only.

In 182, or 29.3 per cent, the patients were found to be suffering from fibroid tumor, cancer, or pelvic cellulitis.

In 377, or 60.8 per cent, the shape of the uterus was materially changed or its position markedly changed.

These 377 cases are further resolved into

Flexions	{ Retroflexions, 112 }	296	} 377
	{ Antelexions, 184 }		
Prolapsus.....	81		

Further, "the flexion cases were very generally attended with textural alterations of the uterus, congestive hypertrophy, etc., which, in accordance with present views would be termed congestion; but it is precisely in those cases where the symptoms of irritation were most marked that severe and well-established flexions were found to exist."

It thus appears that in 60.8 per cent of these hospital out-patient cases which presented uterine symptoms of sufficient importance to suggest the necessity for making an examination, marked physical changes in the form, shape, or position of the uterus were detected.

The total number of cases recorded was, as I have before stated, 1,205, of which 714 are accounted for in the above

* These data, the results of hospital experience, were first published in the last edition of this work, 1872,

analysis. There remain 491 cases, which include many of syphilis or gonorrhœa, pregnancy, general debility, over-lactation, diseases of the bladder or external generative organs, phlegmasia dolens, tumors or inflammations of the ovaries, cases of doubtful diagnosis, cases of disease of other than the generative organs, etc.

The foregoing statistics give the proportion in which distortions and displacements are liable to be observed in the case of hospital patients, in London at least. Turning from these results of public hospital practice it is more difficult to arrive at results which will command attention as to the frequency of uterine distortions and displacements in the class of patients ordinarily denominated "private" patients and the majority of which belong to the better classes of society. I have, however, extracted the following particulars relating to six years of recent private practice with the view of arriving at some conclusion on the question as to the relative frequency of various forms of uterine disease.

It must be premised that the six years' statistics given below are imperfect in one way, for they do not include a number of cases, particularly those seen in consultation practice away from my own residence, which have unavoidably escaped being recorded.

The total recorded cases in six years (1,140) include—

Cancer, uterine or vaginal.....	27
Fibroid tumor and polypus.....	60
Diagnosis of pregnancy.....	33
Flexions, and displacements of the uterus (see explanatory statement below).....	709
Miscellaneous, including.....	
<i>a.</i> Diseases of other than sexual organs.....	} 311
<i>b.</i> Cases of disease of sexual organs, no physical examination.....	
<i>c.</i> Various diseases of sexual organs not included in foregoing list.....	

1140

It is stated in the foregoing list that 709 patients were affected with flexions or displacements of the uterus. This statement requires a more complete explanation. There were probably several other patients who would have been found to be suffering from these affections had an examination been made. The 709 cases are put together because they evidently belonged to one class. The symptoms were so severe or troublesome that an examination was impera-

tive, and the result of the investigation was to show that the symptoms were dependent on the uterus. In a few of the cases where it is expressly stated the uterus was found normal, the cases are still left in this category, because the symptoms observed were such as are ordinarily present in cases of flexion or displacement, and no disease of any other organ was found to account for them.

Flexions (ante- 488, retro- 180)	668
Uterus prolapsed without flexion.....	6
Uterus simply too large or too long.....	11
Hypertrophic cervical elongation.....	3
Uterus normal.....	4
Cases of alternate ante- and retroflexion.....	2
Lateriflexion.....	3
Flexions combined with pregnancy.....	12

Total 709

Under the head "Miscellaneous" are included various slight cases of disorder of the sexual organs, in some of which examination was made, and in many not; it includes also cases diagnosticated to be disease of the ovaries by physical examination or otherwise. It also includes some few cases of patients who were not found to be affected with diseases of the sexual organs at all. The number of cases of the latter class is not, however, enough to vitiate any numerical conclusion to which the figures would appear to lead.

Speaking generally of the foregoing statistics, they may be summed up as follows:

Of 1100 patients believing themselves to be affected with some disorder referable to the sexual organs, or believed to be so affected by the practitioner under whose care they had been, after a careful investigation of the case and from the results of physical examination, about 700 were found to be suffering from well-marked flexion or displacement of the uterus; 87 were affected with cancer or fibroid tumor; there remain rather over 300 cases accounted for under various heads in the foregoing list.

The statistics of my own private practice thus show that in about 70 per cent of patients applying for advice, flexions and displacements existed, and, in my judgment, proved to be the essential cause of the sufferings of which the patients complained. When it is stated that flexions and displacements existed in this large percentage of cases, it is not to

be inferred that these constituted the sole maladies present. Few of these cases were without complications of various kinds. But almost the whole of these cases were really severe ones, none being included but those in which the patient was suffering or had suffered much, and none in which the diagnosis was at all doubtful.

CHAPTER XV.

DISPLACEMENTS AND DISTORTIONS OF THE UTERUS (FLEXIONS)—3. ETIOLOGY.

ETIOLOGY.—Statistics of Cases in Private Practice, showing Frequency of Mechanical or Physical Injury or Accident.

CLASSIFICATION OF CAUSES.—1. Predisposing: Undue Softness of the Uterus from Malnutrition (Chronic Starvation)—from Sub-involution—Physical Prostration—Rupture of Perineum—Previous Pregnancy.
2. Exciting: Accidents—Over-Exercise—Special Exercises—Special Occupations—Marriage. 3. General Causes.

For some few years past I have taken particular pains to ascertain the cause of the displacement or distortion in cases of this kind coming under my notice. In a considerable number of the cases I found it possible to trace in the previous history particular causes explanatory of the occurrence. Due care has been taken to guard as carefully as possible against sources of fallacy in tracing the relation of the cause and effect.

It is remarkable how frequently the particular cause of the displacement or distortion has proved to be some external mechanical physical injury. The following data illustrate this part of the subject.

I have selected from records of cases collected during six years 340 cases in which the patient was single, or, if married, was sterile, and in which the uterus was affected with ante- or retro-flexion. I have purposely excluded for the moment cases of patients who had had children, as in such cases childbirth, or the sequelæ of child-bed, introduce disturbing considerations.

It thus appears that in $\frac{149}{340}$, or 43 per cent, of cases of flexion in single women, or, if married, sterile, the cause was distinctly traced to some one of the above-mentioned agencies.

It is right to state that in three of the above cases the pa-

tient had had a miscarriage, accident or strain having produced apparently the miscarriage as well as the displacement, or, to speak more correctly, the accident or strain was responsible both for the displacement and the miscarriage.

340 Cases of Single or Sterile Patients Affected with Uterine Flexions.

The flexion distinctly traced to	Retro-flexions	Ante-flexions	Total.
Strains, lifting, carrying, nursing, standing, dancing, gymnastics, croquet, swimming, etc.....	13	49	62
Falls, or other accidents.....	11	18	29
Horse exercise.....	6	9	15
Over-walking.....	8	7	15
Organ or harmonium-playing.....	1	3	4
Long railway journey.....	1	1	2
Retention of urine in railway journey.....	1	1	2
Fright.....	0	1	1
Sea-sickness (three months' voyage).....	0	1	1
Measles.....	1	0	1
Scarlet fever or typhoid fever.....	2	11	13
Menstruation checked by cold.....	0	3	3
Menstruation checked by sea-bathing.....	0	1	1
	44*	105†	149

Strains resulting from efforts in lifting, nursing, etc., constituted a very common cause—62 out of 149 cases. They most commonly produce the effect in patients who undertake such exertions without proper training or strength. Nursing and lifting sick relatives appear to be very dangerous. Lifting, or occupations involving much standing, were responsible in many cases. "Stretching up to a cord," "drawing the cork of a bottle," "carrying a child," "strain at archery," "moving furniture," "rowing," "use of sewing machine," "lifting a patient from the ground," "lifting washstand," were the causes traced in other instances. Unnecessary gymnastic feats, excessive standing at croquet, one or two cases traceable to excessive swimming, may also be mentioned.

"Falls," or other accidents, include many cases in the tabular list above given. "A complete somersault down a flight of steps," "thrown from a carriage," "fall from a

* Selected from 83 cases }
 † Selected from 257 cases } = 340

carriage," "thrown from a horse," "fall from a horse," falls on the back, on the ground, down-stairs, etc.—under the foregoing heads I find cases of retroflexion recorded. "Jump from a carriage," "slipped down flight of stairs," "fall from back of dog-cart," "fall from horse," "slipped down-stairs," "fall down steps," "jump from a horse," "fall from a horse and horse rolled over her"—under these heads cases of antelexion could be quoted.

Horse exercise was clearly traced as a cause in several cases. In one case it indirectly led to displacement, owing to prolonged retention of urine. In weakly young women, imperfectly trained to it, horse exercise appears decidedly injurious.

"Over-walking" includes several cases. "Long mountain walks," "daily long walks," and "long walks to catch a train," are causes traced in some retroflexion cases. "Long walks up-hill," "very fatiguing walk," "walk during menstrual period," etc., in certain cases of antelexion. Organ or harmonium playing was found injurious in a few cases. Retention of urine during long railway journey, fright, etc.—these cases require no particular mention.

There were fourteen cases in which the cause assigned above is measles, scarlet fever, or typhoid fever. The reason for introducing these cases is, that the details on investigation proved that the uterine affection had occurred from ordinary walking during convalescence from the fever. The conclusion formed was that the uterus, enfeebled in common with the other organs of the body, gave way under ordinary exertion, and the preceding fever was thus really responsible for the resulting uterine affection.

The causes of uterine distortions and displacements may be divided into three classes—predisposing, exciting, and general.

Predisposing:—

Undue softness of the uterus—

From malnutrition (chronic starvation).

From sub-involution following pregnancy.

Physical general prostration and weakness, as from fever, etc.

Rupture of perineum.

Previous pregnancy.

Exciting:—

Accidents—

Strains.

Falls.

Railway and carriage accidents.

Over-exercise—

Long walks or drives.

Excessive exercise during menstruation.

“ “ “ pregnancy.

Exercise too soon after confinement.

Special exercises—

Horse exercise.

Gymnastics (inappropriate or injudiciously selected).

Croquet, lawn-tennis, etc. (in excess).

Special occupations—

Requiring much standing, as counter work.

Requiring carrying and lifting, as nursing.

Washing.

Use of sewing machine.

Straining in defæcation, etc.

Marriage.

General.—See remarks later on.

Of the predisposing causes, *undue softness of the uterus* is perhaps the most important. It may be due to malnutrition either in a single woman, or in one who has borne children. This condition of the uterus has been already described (p. 98). *General prostration and weakness*, as from the effects of fever, appear to be powerful predisposing causes (see list of cases enumerated at p. 180). Clinical facts show that uterine flexions are liable to be initiated by exercise or movement taken shortly after prostration from fevers. *Rupture of the perineum* is a special predisposing cause: the support of the lower part of the vaginal canal is taken away, and this is a powerful predisposition to displacement of the uterus and to flexion of the organ.

Previous pregnancy predisposes to flexion in several ways. The influence of rupture of the perineum (if it exist) has already been alluded to. But in other ways a predisposition may exist. Thus, if the uterus is left in a state of sub-involution, the mere weight of the organ tends to produce flexion. If the organ remains softer than usual, as well as in a state of sub-involution, the predisposition will be

greater. Again, the loosening of the attachments of the uterus is frequently great during pregnancy and labor, and even if no lesion is discoverable, the normal fixation of the uterus may have been lost and a predisposition to flexion created.

Repeated pregnancies in women badly nourished has a tendency to weaken the uterus very much. The uterus has little rest—it has scarcely time to recover from the effect of one pregnancy before another occurs. In the end the uterus becomes flexed, the flexion is confirmed, and either abortions or sterility (secondary) result.

Exciting Causes of Flexions.—Accidents, including *strains, falls, and railway or carriage accidents*, are very important. It has hardly as yet come to be recognized as a fact that the uterus may be very seriously displaced and injured by severe accidents. The number of cases of severe injury to the uterus from these causes recorded in my case-books is considerable. The nature of the injury is generally, as experience has informed me, not understood at the time of the accident: the patient feels ill, generally no bones are broken, there is a severe shock, the effects of which last a few hours or a few days or longer, and gradually the patient loses the pain and no further notice is taken of it. But later on it is discovered that the patient is more or less completely incapacitated, and careful examination reveals the fact that the uterus is displaced and distorted, investigation of the facts conclusively showing that the discomfort or incapacity dates from a certain accident. One of the first cases of the kind which came under my notice was that of a young lady who, travelling by train, had been rolled down a railway embankment, and had become affected with acute retroflexion of the uterus as the result. The record of many cases of an analogous kind which is in my possession, gives unmistakable proof of the effect of accidents in producing such displacements and distortions.

The effect of a severe concussion on the uterus varies in different cases, and it varies according as it is accompanied or not by a severe strain. It is not uncommon for the concussion and the strain to come together. There is the fall, and the muscular effort to avoid the fall or accident. In the latter case the displacement of the uterus is likely to be greater. The facts in my possession show that the uterus may be forcibly driven downward to the floor of the pelvis, or to the back part of the pelvis—into one corner of it as it

were—or that it may be actually driven out of the vagina—[at least I have known of one case of the latter kind in a patient who had had a child, and who, while in the standing position, slipped from the table on which she was standing to the floor]. More generally the uterus is not only driven downward to the floor of the pelvis, but it is bent backward or forward, very acutely, at the same time. It was believed by Dr. Squarey that rupture of the uterine fibres sometimes occurs in the suddenly occurring acute flexion cases, and I consider it quite possible that it is so. At all events, it is not uncommon for some blood to escape from the vagina after such accidents. The effect of the blow or concussion will vary probably according to the position of the patient at the time, and the condition of the uterus, but when the case is investigated it is found that the uterus remains on the floor of the pelvis, or in one corner of it, or that it is anteflexed or retroflexed. It is important to note that when bones are broken or other notable injuries received, the internal injury to the uterus may escape notice. Two cases of this kind occur to me to mention. One was that of a lady who fell and injured the sacrum, was laid up by that injury for some time, then went about and rode on horseback much, subsequently becoming paraplegic. The paraplegia was naturally set down to the spinal injury, but it proved to be due to a retroflexion of the uterus, and the patient was completely cured by restoration of the uterus. Another was that of a young lady who fell and broke her arm: some months after that obstinate nausea attracted attention, and it was found that the uterus had been violently displaced and pushed into one of the posterior corners of the pelvis.

Violent straining may produce severe flexion. Of this class of cases may be mentioned one in which the patient, quite unaccustomed to such an exertion, lifted a helpless invalid from the floor, who had suddenly rolled out of his chair, the result being severe flexion. Another, that of a young lady, who in a spirit of bravado carried a very heavy cheese across the room, and became forthwith an invalid from severe flexion of the uterus.

Long walks may produce at once acute flexion, or, continued from day to day, may slowly give rise to flexion. Very long walks are certainly dangerous to those unaccustomed to them. Young recently married women, untrained and unfit for such continuous exertion, often inflict very

serious injury upon themselves by walking about all day during the honeymoon. Long mountain walks should not be undertaken by young women unless trained for the purpose and in robust health; and if a predisposition to flexion exists, much harm may be done by them. "A long walk of ten miles to catch a train" produced severe retroflexion. Long walks often inflict serious injury on young women at school who do not happen to be "strong," and who are therefore predisposed to suffer from flexion.

It appears that long walks are more dangerous if undertaken during the menstrual period, no doubt because the uterus is at that time heavier, larger, and more vascular, and therefore more liable to become displaced. Long walks are not uncommonly the cause of abortion during the second or third month; the uterus becoming displaced or flexed, the abortion is thus produced. Another important class of cases is that in which walking in excess is undertaken too soon after labor, while the uterus is still heavy, and in a state of sub-involution.

Horse exercise may cause flexion of the uterus. It may be produced suddenly and at once, or more gradually. It is not so liable to happen if the individual be strong and properly trained to it; but evidence that could be adduced seems to show that it is a kind of exercise not free from liability to produce serious uterine mischief, even when judiciously managed. The evidence shows that the uterus is liable to be pushed downward on the floor of the pelvis, and generally very decidedly flexed backward or forward. If there be no particular predisposition to flexion horse exercise may do no harm, but it is never certain that it will not.

Some few cases of severe flexion were undoubtedly traced to too severe gymnastic exercises. In two cases severe flexions were produced by jumping down from a considerable height; in one severe and most troublesome retroflexion was produced by the feat of raising the body from the horizontal position without the use of the arms. In two cases rowing was distinctly traced as the cause.

Dr. Aveling, who has published a valuable work "On the Influence of Posture on the Health of Women," considers that the erect posture has much influence in inducing disease, gravitation giving rise to vascularity. He considers the sitting posture on a chair as unnatural and injurious,

and would prefer the sitting posture on the floor. It is in accordance also with my experience that the prolonged ordinary sitting posture is injurious, and I have seen many cases where this posture could not be borne at all. But I do not know whether sitting on the floor would or would not prove equally inconvenient.

Lawn-tennis and croquet, when carried to excess, in the case of individuals predisposed to flexion, are not free from danger, though doubtless innocent enough under other circumstances.

The next class of cases includes special occupations requiring much standing. Young women standing for many hours consecutively at the counter become frequently affected with flexion of the uterus. In hospital practice such cases not uncommonly present themselves. Dr. Edis has lately done good service in calling public attention to the injurious effects resulting from such over-standing: the production of severe flexion of the uterus is certainly one of them.

The occupation of nursing, involving, as it does, necessity for lifting invalids or for standing many hours together, is liable to cause severe flexions in the case of young women who are not strong and properly trained to the work. Numerous instances have fallen under my notice in which permanent ill-health or incapacity, due to a severe uterine flexion produced while nursing a sick relative, has been observed.

Laundry work is perhaps one of the most trying to the attachments and connections of the uterus. It is liable to produce severe flexion, though it is more commonly the case that actual prolapsus is produced by excessive labor of this kind. The use of the sewing machine, playing the harmonium, or organ, are other occupations requiring mention. Some severe uterine flexions have been produced by these occupations in cases which have come under my notice.

Straining in defæcation is both a consequence and a cause of uterine flexion. Nothing is more common than to meet with cases in which uterine displacement and flexion give rise to constipation. The effort required to relieve the bowel increases the existing flexion. This is more particularly the case in retroflexion. I have seen a case of retroflexion in which the fundus uteri was driven downward by

the straining effort against the sphincter ani, most effectively blocking up the canal like a ball-valve.

Marriage must be mentioned among the causes of flexion. In cases where there is a predisposition to flexion, and where the uterus is soft and weak, intercourse has often a very prejudicial effect; and marriage in such cases may lead to troublesome disease of the uterus in consequence of the mechanical disturbing influence thereby brought to bear upon it.

It seems probable that were the true history of every individual case known the cause would be evident enough. I have found it possible to assign a cause in a very large percentage of the cases which have come under my notice, and frequently the cause has been discovered some time after the patient has been under treatment. Slight accidents, even severe ones, are often passed unnoticed. In many cases, no doubt, the flexion occurs gradually. There is generally in such cases a slight predisposition to begin with; and although the exertion or exercise taken by the patient is nothing out of the ordinary, it is more than can be endured; and in the end, after many years perhaps, the uterus is found affected with a severe form of flexion. Young women, imperfectly fed, having no stamina to begin with, and called upon to undertake duties involving standing or walking or other exertion—governesses, for instance, called upon to daily take long walks with their more robust pupils—offer numerous instances of the truth of these remarks.

CHAPTER XVI.

DISPLACEMENTS AND DISTORTIONS OF THE UTERUS (FLEXIONS)—4. CLASSIFICATION AND PATHOLOGICAL EFFECTS.

CLASSIFICATION OF FLEXIONS AND CONSEQUENT DISPLACEMENTS.—Pathological Effects.

1. The Seat of the Flexion. 2. Variations in the Condition of the Tissues of the Uterus. 3. Various Kinds of Flexion or Version (Rotation). 4. Varieties in Position of Uterus as a whole.

PATHOLOGICAL EFFECTS OF FLEXIONS, Relation to Congestion, Relation to Hypertrophy of the Uterus—Contraction of the Cervical Canal—Changes in the Uterus, Atrophy, Compression at the Seat of the Bend, Sensitiveness at the latter Spot—Persistence of the Distorted Shape of the Uterus—Changes at the Os Uteri.

One principal cause of disagreement in regard to flexion of the uterus is want of appreciation of the fact that flexions vary so much in character in different cases. To overcome this initial difficulty it is necessary to attempt some classification of the varieties observed.

CLASSIFICATION OF FLEXIONS OF THE UTERUS AND CONSEQUENT DISPLACEMENTS.

1. *The Seat of the Bend.*—The most common situation is the position of the internal os uteri, or about midway between the os uteri externum and the top of the fundus. Dr. Emmet, speaking particularly of antelexions, adopts a peculiar classification. He speaks of (1) flexions of the cervix below the vaginal junction, and of (2) flexion of the body of the uterus. He regards the first as congenital, the second as liable to occur after puberty. I do not share his view as to the congenital nature of the first variety, but it is the fact that the greater part of the bend is low down in many cases. In most cases the bend affects a considerable part of the uterine canal, involving the upper part of the cervix as well as the lower part of the body of the uterus.

2. *Variation in the Condition of the Tissues of the Uterus* associated with the flexion. This variation is very important in the classification of flexions.

a. The uterus may be excessively soft, hardly more resistant than wet brown paper. Reduction of the flexion

easy, but recurrence not observed perhaps until patient has moved about again.

b. Moderately-soft, hypertrophied as regards the fundus and cervix, congested and heavy. Reduction easy, recurrence on withdrawal of sound not immediate.

c. Normally hard, but hypertrophied as regards the fundus and cervix—one or both. Reduction difficult, recurrence on withdrawal of sound immediate.

d. Excessively hard, the os perhaps much hypertrophied, lips everted and congested; much hypertrophy of body of uterus also. Reduction very difficult, or only to be effected by sustained effort.

e. Variations in the thickness of the uterine walls, especially at the seat of the flexion.

3. *Various Kinds of Flexion and Version.*—

a. Anteversion (anterior rotation) pure and simple.

<i>b.</i>	Anteflexion, first degree	} with varying degrees of anterior rotation.
<i>c.</i>	“ second degree	
<i>d.</i>	“ third degree	

e. Retroversion (posterior rotation) pure and simple.

<i>f.</i>	Retroflexion, first degree	} with varying degrees of posterior rotation.
<i>g.</i>	“ second degree	
<i>h.</i>	“ third degree	

j. Lateriflexion, right or left.

k. Anteflexion with subsequent posterior rotation, the uterus yet preserving its anterior flexion.

Oscillating, or alternate ante- and retroflexion.

There are more minute shades of difference observable than those above indicated, and the differences existing between first, second, and third degrees of flexion may be not easy, precisely to define, but in practice an approximate definition of the degree of flexion present is generally quite practicable.

4. *Variation in Position of Uterus as a whole.*—

a. Uterus pushed backward on the floor of the pelvis, with or without flexion of the same. (Not common.)

b. Uterus prolapsed, more or less completely in a retroflexed state. (This condition more properly comes under the head of “Prolapsus.”)

c. Uterus higher than usual in the pelvis, but in a flexed condition. (Very rare.)

d. Uterus flexed in various modes and degrees (see preceding list), and lying lower than usual in the pelvis. (This is the most common condition.)

I propose in the next place to call attention to some of the pathological effects of flexions of the uterus. Fig. 34 represents the comparative thickness of the walls of the

FIG. 34.

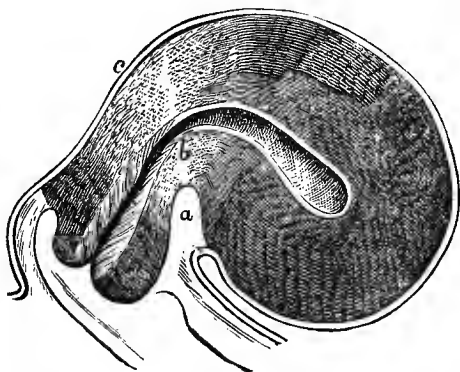


uterus, as shown by a section through it vertically and from before backward. What would be the effect upon the uterus of a bending of the organ? It would obviously be to produce a compression of the tissues of the organ at the seat of the bend (Fig. 35). Such compression is in the nature of things inevitable. The distance between the external and the internal wall will, in process of time, though probably not immediately, be diminished. The diminution of the thickness of the walls of the uterus will take place to a greater extent on the concave side of the bend. There will be a diminution of the diameter at the position of the flexion (*a, b, c*), and the general result will be that there is a compressing force exercised at the middle of the uterus upon the tissue of the organ (Fig.

35). The effects of this compression in retarding the circulation in the uterus, and in producing acute *congestion* of the organ, have already been discussed at p. 112 in connection with the subject of congestion of the uterus. Its effects in producing a "strangulation" of the uterus have been also described in the same place. It is, I believe, an inevitable result that the circulation in the upper part of the uterus should be in a considerable degree interfered with when compression is thus exercised upon the uterus and its vessels, the result being that the upper part of the uterus comes in the end to contain a larger portion of blood than usual. It becomes unduly heavy and larger. It becomes not only congested, but likewise sensitive, to an extraordinary degree in some cases; and the congestion and sensitiveness constitute the most important of the phenomena, to a less degree in ante flexion than in retro flexion. This compression in the middle of the uterus produces various

effects in different cases. After a time, if the flexion is not very acute in degree, the uterus may become habituated to it, and acquire a certain toleration of this condition. But when it does not acquire the toleration, or when, as frequently happens, the malady increases, we have an opportunity of witnessing the following effects: the fundus uteri is found sensitive, swollen, and tender on pressure; the patient is in a state of discomfort which hardly any physical condition of other organs of the body can exceed. The physical compression of the uterus is a phenomenon to which I attach great importance as a feature in the natural

FIG. 35.



history of these cases. An important effect of the mechanical interference with the circulation in the uterus occurring in connection with flexion, is that produced upon the menstrual functions. One effect of flexion is to narrow the uterine outlet so that the menstrual products do not so readily escape. But chronic congestion due to flexion alters the menstrual discharge in another way. Sometimes the quantity is enormously increased. In other cases it is as much diminished, is scanty and very trifling in amount. It is not uncommon to find cases in single women where menstruation has for some time been profuse, and then has become altogether too scanty. These results are due to mechanical interference with the general uterine circulation which severe flexion is capable of producing.

The next effect to be mentioned is *hypertrophy of the*

uterus, general enlargement of the organ, the result of long-continued congestion. Dr. John Williams considers that the hypertrophy observed in cases of flexion is analogous to the hypertrophy of the heart due to stenosis of the orifices. In connection with the subject of hypertrophy of the uterus, it is necessary to consider the influence of defective involution after delivery. When we have the two things associated together—defective involution and flexion—we find hypertrophy of the whole organ. Flexion alone is sufficient, but, when co-operating with defective involution, the hypertrophy is most marked. Further, associated with this hypertrophy of the cervix of the uterus, we generally meet with the following conditions: A very great increase of secretion from the cervical glands, and other changes in the mucous membrane which were formerly considered to be ulcerative in character.

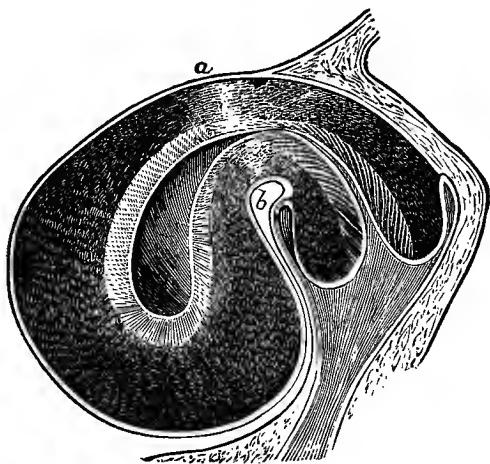
Descent of the Uterus as a Whole.—A common effect of flexion is descent of the uterus as a whole. This is one of the most important effects, clinically, and is the starting-point, in many cases, of prolapsus of the uterus. It is the first step in the process in a considerable number of cases. When the uterus is flexed, it becomes from that moment a source of irritation; the patient has difficulty in evacuating the contents of the rectum, and the functions of the bladder are interfered with, though in a somewhat different manner. The general result is, that the patient has frequently to use straining efforts either at stool or in micturition. The effect of this straining is to propel the uterus downward in the pelvis; and when this process has been going on for weeks and for months, or for years, the result is eventually that the uterus, as a whole, comes to occupy a position in the pelvis which is much lower than it should be. In making an examination, we find the os uteri quite close to the vaginal aperture in many instances; or, if we do not find it there, we find it dislocated in a corresponding manner backward, and very low down. I believe this is the mechanism of the first stage of prolapsus of the uterus in nine cases out of ten.

The mechanical results observed are very interesting, and will be more particularly described in the chapter on Prolapsus.

Compression and contraction of the cervical canal is another very important effect of flexion. It is necessary that this canal should be in a patent condition, in order that menstru-

ation may occur easily, and that impregnation may take place. Contraction of the cervical canal is one of the common causes of dysmenorrhœa and of sterility, and is, according to my experience, a direct and almost necessary effect of flexion of the uterus (see chapters on Ante flexion and Dysmenorrhœa). Other conditions may produce contraction of the canal, but the percentage of cases of contraction due to other causes is not more than from one to three or four per cent. The mechanism by which flexion obstructs is obvious. At the internal os uteri, the canal

FIG. 36.*



has a diameter, under ordinary circumstances, of one eighth of an inch; the canal is larger below that point. But as the strength of a chain is that of its weakest link, so the size of a canal is that of its smallest portion, when we come to consider how far it is available for the passage of fluid. Regarding the thickness of the walls, in proportion to the

* Fig. 36 represents a case of long-standing retroflexion of the uterus. For purposes of illustration, I have, in teaching, used a model of the uterus on a large scale, constructed from sponge. When this model uterus is acutely bent, the compression thereby produced at the seat of the bend is very obvious. A marked condensation occurs at this spot. [The vagina is here represented by the artist as it should be in ante flexion. It should run in the opposite direction to make it a retroflexion.]

size of the cervical canal, it may be conceived what must happen when that organ is bent at an acute angle; viz., a very considerable narrowing of the canal (Figs. 35 and 36). This is the explanation of dysmenorrhœa, and the reason why it occurs so frequently in cases of flexion. In cases where the flexion takes place very gradually, where it has been advancing over a period of many years, the narrowing may be less obvious, owing to the gradual arching of the canal; but when the flexion is produced suddenly and acutely, it is often very decided.

In some cases there is a real stricture at or near the internal os uteri, and the canal at the place in question is really narrow, and the sound only passes through the narrower part with a kind of jerk; but in many cases there is only what may be termed a potential stricture. The canal is narrowed and obstructed by the forcible coaptation of the opposite walls; thus the passage of fluids through it is obstructed, although the sound, if gently introduced, may be easily made to traverse the apparently narrowed part of the canal. There have been very great differences of opinion as to the frequency of stricture of the internal os, but, according to my experience, actual stricture of the internal os is not very common; while, on the other hand, apparent obstruction is frequently observed in cases of acute flexion. The condition of the uterus as regards hardness and softness is very important in the true estimation of these cases, for when the uterus is very soft the sound may pass in quite readily if held rather stiffly, and I have known cases where severe flexions have been overlooked, apparently from this circumstance of the sound encountering no obstruction and thus entering in what seemed to be the normal manner. The fact is, that in such cases the sound straightened the uterus as it entered.

The uterine canal being more or less impermeable in consequence of the flexion, various other effects result: such as the retention of fluid in utero, dysmenorrhœa from retention, leucorrhœa from retention, and sterility. Further remarks on these subjects will be found in the several chapters relating to them.

The effect on the walls of the uterus at the seat of the flexion.—At the place where the flexion occurs, generally at the os internum, certain effects and changes are produced. It appears that one of the first effects of the flexion is to give rise to a swelling of the tissues of the uterus on the concave

side of the bend, this swelling affecting the uterine tissue and the plexus of vessels just outside the uterus. There is a specimen in the Middlesex Hospital Museum, in which a section shows an increase of the thickness of the wall of the uterus on the concave side of the flexion. In some cases of ante flexion I have observed the presence of a sort of transverse ridge or elevation projecting on the concave aspect of the uterus, and felt by the finger through the roof of the vagina, due, no doubt, to the swelling of the tissues as above described. This is a condition of things which is, however, not generally met with when the flexion has existed any considerable time. After two or three years (in cases of acute flexion) there always occurs an atrophy of the uterine wall on the concave side of the bend, and a consequent thinning of the wall at that spot. I have found it apparently hardly thicker than a piece of cartridge-paper at this spot. This condition of the uterine wall was some years ago described by Virchow. It appears to be a physical result of the compression or squeezing of the uterus itself at this situation. And it is not observed unless the flexion is severe enough in degree to cause such a compression. Accompanying atrophy of the uterine wall as here described, there often occurs a considerable degree of hardening or condensation of the tissues. Probably the condensation is first in order of occurrence, the atrophy occurring later on. In cases where this hardening occurs, the uterine sound, on passing the narrowed part, encounters considerable resistance, and passes through and beyond it with a kind of jerk. In some cases the compressed tissues are actually softened.

The compression to which the uterine tissues are subjected at the seat of the bend has the result, in many cases, of producing an extreme sensitiveness to the touch at the point in question. This is evident on using the sound. Thus, it will be found that the sound enters the cervical canal easily and gives no pain, but when it touches the uterine canal at about the internal os, severe pain is felt and evidence given of the existence of great sensitiveness. Passing beyond this point into the uterine cavity, it is found that the pain ceases. This observation I have made in several such cases. It is principally observable in those cases where the flexion is of long standing. The conclusion which I have formed as to such cases is, that the uterine nerves distributed to the tissues which are

the seat of the compression are irritated by it, and that this is the explanation of the tenderness to the touch. The remarkable immunity from tenderness above and below the part affected, and its precise agreement in position with that of the bend, have led me to adopt the above explanation. This conclusion is of great interest in reference to various important questions as to the nervous and hysterical affections to which women are liable.

Slight bending of the uterus is not liable to produce atrophy of the walls at the seat of flexion. Atrophy occurs to the greatest degree in cases where the flexion is acute, and of long standing.

Chronicity of severe flexion of the uterus appears to be mainly connected with alterations in the thickness of the wall at the seat of flexion.

This leads me to speak of the persistency of the distorted shape in cases of flexion. This persistency varies exceedingly in different cases, and appears to depend on the following circumstances: If the flexion be severe, and nothing be done to relieve it the uterus becomes hardened, literally, in its distorted shape. This is observed when the flexion is the result of a severe accident, the individual being in a state of health at the time.

Changes at the Os Uteri.—Another effect often observed in chronic flexion is eversion of the cervical canal, so that the os uteri presents a raw, vascular surface. Such a condition is particularly met with (1) in cases of single women, where the uterus has become hypertrophied, softened, and the os considerably increased in size; or (2) in cases where the patient has borne children, and the aperture of the os is wide from side to side. The eversion most affects the posterior wall of the cervical canal in cases of retroflexion, and the anterior wall of the canal in cases of ante flexion. If the cervix has been lacerated bilaterally, the degree of eversion—ectropion—is very great. Such laceration of the cervix is not very uncommon, as has been pointed out by Dr. Emmet of New York. Eversion may, however, occur quite apart from laceration of the cervix.

CHAPTER XVII.

DISPLACEMENTS AND DISTORTIONS OF THE UTERUS (FLEXIONS)—5. SYMPTOMS, INCLUDING STERILITY AND ABORTIONS.

Pain, Spontaneous—Pain on Locomotion (Uterine Dyskinesia)—Explanation of this Symptom: its great Importance—Undue Tenderness of the Uterus to Touch—The “Irritable Uterus” of Gooch shown to be Acute Flexion.

Dysmenorrhœa, Leucorrhœa, Menorrhagia, Amenorrhœa—Sterility—Abortions—Statistics of Sterility and Abortions in Hospital and Private Practice.

Disturbance of Functions of Bladder—of Rectum—Dyspareunia—Reflex Nervous Symptoms.

There is abundant clinical evidence to show that of all the various derangements of function, observable in diseases of the uterus, by far the larger proportion are traceable to the existence of flexions of the uterus or to the secondary effects of these flexions. In a former chapter (see p. 92) a list was given of the various symptoms observed in practice. It will now be necessary to take these symptoms one by one and point out how far they are connected with the existence of uterine flexions.

Pain is either (1) *spontaneous*—occurring, that is to say, when the patient is at rest; or (2) *it is produced by motion of the body or exertion*; or (3) it is produced by touching the uterus itself—*abnormal sensitiveness*.

Spontaneous Pain.—It is not common to meet with severe spontaneous pain in cases of flexion of the uterus when the patient is completely at rest. It is not uncommon to meet with a continuous slight aching. Spasmodic pain is not very uncommon. It has been described under the name *uterine colic*—a pain coming suddenly, lasting a short time, and disappearing for a distinct interval, resembling, in fact, very much a miniature labor pain. Such spasmodic pains are now and then met with in cases of uterine flexion. In a few cases a fixed pain is observable even when the patient is at rest.

It varies also according to the nature of the flexion. As a rule, antelexion is indicated by one kind of pain, and retroflexion by another. But these rules are open to ex-

ception. Most commonly the pain is felt in the back, in the sacral region. Another frequent position for pain is one of the groins, just above Poupart's ligament, on one or the other side. It is sometimes felt in the region of the uterus itself, but this is not so common. It is rather common for it to be experienced down the back of the legs, down the back of the thighs, on one side or the other. With retroflexion the pain most commonly occurs in the back, with ante flexion in the inguinal regions; in different cases, however, we find very remarkable variations in these rules.

Some years ago I was requested to see a young lady who had been affected with pains in one spot in the abdomen, just on a level with the umbilicus, and on the left side of it; she had not been without that pain for a period of five or six months, and she had, previously to this time, for some years experienced other pains and serious discomforts. But the particular circumstance to which she called my attention was this pain in the abdominal region, in the position indicated. No tumor could be discovered in the abdomen, nor was there any apparent cause for this pain. But on investigating the condition of the uterus, it was found that the patient was the subject of acute retroflexion. The case was additionally interesting from the fact that after the introduction of the sound into the uterus, and turning the uterus into its proper position, there was no return of the pain whatever. Further treatment was necessary to rectify the state of the uterus; but, this particular pain, which was a source of so much annoyance, went away after the first use of the sound. Another case, equally interesting, was that of a lady who had had one child about five years previous to the time of my seeing her. She had been unable to walk about or to follow her ordinary avocations since the labor; but the inconvenience of which she chiefly complained was a pain on the right side of the abdomen, on a level with the umbilicus, and, in fact, in a corresponding position to the pain in the first case mentioned. This patient was found on investigation to have acute retroflexion of the uterus.

I mention these exceptional cases, because they illustrate the fact that the pain which is produced by flexion of the uterus is not always in the same position. More generally, in 90 per cent of cases, the rule holds good that the pain is located in the back in cases of retroflexion, and in the inguinal regions in cases of ante flexion. As a rule, patients do

not complain of pains, in cases of flexion, so long as they remain quiet. If they remain in bed, or are content to lie on the sofa, there is usually but little pain. But any degree of motion is sufficient, or may be sufficient, to bring on pain, and the pain that is thus brought on may be either severe in degree or comparatively trifling; in some instances the discomfort produced can hardly be said to amount to pain.

Pain on Locomotion (Uterine Dyskinesia).—This is one of the very commonest of the symptoms observed in cases of uterine flexion. It is a symptom to which no sufficient amount of attention has as yet been paid, and it is so important in its effects, that careful consideration of the connection as effect and cause between it and uterine flexions is absolutely necessary.

In patients suffering from flexions the pain produced by locomotion varies in degree very much. It varies from a slight pain in the back to a complete inability to walk or move without the extremest suffering. Questioning patients as to their sensations, it will be found that they are almost invariably such as would come under the above heading—uterine dyskinesia.

The pain produced by locomotion may be slight or it may be violent in degree, but the characteristic of it is that it is brought on by motion. It may be so severe that the patient is practically unable to move at all, or it may be so slight that she moves in spite of it, and continues to do so. There is no paralysis, in the ordinary sense of the word, but there is a strong disinclination to move. The degree of disability varies exceedingly in different cases. Some patients do not mention it unless they are asked whether they can take a moderate walk, without suffering pain; others can talk of nothing else—the inability to do this, that, or the other, to walk, or to ride, or to visit—these are to them ever-present evils from which they desire deliverance. The patient informs us that she is unable to stand for more than two or three minutes at a time, after which she is obliged to sit down. Such patients cannot even bear to be kept waiting at the door while the bell is being answered. Others find that walking a short distance brings on so much pain and produces such discomfort that exercise is impossible. It is a remarkable feature that in all these cases motion produces pain. Such, for instance, as

stooping down to pick up any object from the floor, leaning forward, reaching upward, going upstairs, etc.

The disability is sometimes so great that the patient is shut off from most of the enjoyments of life, for the simple reason that locomotion is impracticable. Patients consult us for a variety of reasons. In many cases undoubtedly the locomotive disability is not the reason they assign for applying for relief. In a vast number of cases, however, this is the reason impelling them to seek aid, although they have not formulated their ideas on the subject with any degree of precision.

The significance of this symptom has been overlooked, partly because it is so common, partly also because the idea has been too frequently entertained that this disinclination for walking, and other kinds of exertion, is a fanciful one—that it should not be treated seriously, being a whim or caprice of the patient, which should not be encouraged.

In sixty-seven cases of uterine distortion or displacement, admitted during seven years into All Saints' Institution, reported by me in a paper read to the Obstetrical Society of London,* this symptom was so frequently observed that it may be said that almost all the sixty-seven patients presented it in a marked form. The following are quotations from the paper in question:

"The maladies with which these sixty-seven patients were affected existed in various degrees of intensity. In several cases the patients were actually bedridden, in others the capacity for locomotion was so materially diminished that the sufferers had to give up their employment. In other cases, again, the malady, though not so severe, had proved intractable, and therefore relief was sought in the institution."

"Outwardly, the condition of these patients was characterized by great weakness, more or less inability to walk (uterine dyskinesia), and a general condition of malnutrition. The principal organ affected was the uterus; various degrees and forms of uterine distortion and displacement existed, causing painful symptoms of various kinds; pain on locomotion, nausea, and menstrual irregularities being those principally spoken of."

"Almost all the sixty-seven patients admitted into the Institution and comprised in the foregoing remarks pre-

* "Obst. Trans.," vol. xxii. for 1880.

sented this symptom in a marked form. It may almost be said that this was indeed the principal symptom, and the one which had forced itself on their particular attention in the majority. This symptom I regard indeed as one deserving of attentive notice in all cases of uterine distortion and displacement. The fact appears to be that physical exertion, of almost any kind, is, under such circumstances, uncomfortable in various ways, because it involves an exaggeration or temporary increase of the malady from which the patient suffers. An active life is necessarily abandoned after a time by the sufferer, and a helpless invalidism is the result in protracted cases. Some of the patients treated in All Saints' Institution had been bedridden for several years. With reference to such cases, it must be further remarked that the affection, which is indeed a very real one in these instances, is one which it was formerly the custom to regard as imaginary, fanciful, or hysterical, and such patients were consequently deprived not only of medical help, from the fact that their cases were misunderstood, but of the sympathy of their friends, who regarded them as capable of exertion if 'they only made an effort.' The fact is, that in these cases exertion only aggravates the mischief and perpetuates the malady."

That uterine displacements are attended with discomforts is not a new idea. Because they are not absolutely universally attended with discomforts, certain writers have thought themselves justified in saying that uterine displacements are in themselves of no particular importance. But, obviously, the correct method of arriving at the truth on this subject would be to inquire how far and how frequently discomforts referable to the uterus, such as the particular one now under consideration—namely, impaired locomotion, or pain produced by locomotion—can be proved to be connected with uterine distortion and displacement. The two following propositions are essentially different, as will be readily admitted when they are concisely stated: 1. Uterine distortions and displacement invariably give rise to pain on locomotion. 2. Pain on locomotion of such a kind as to be referable to the uterus is invariably associated with the presence of uterine distortion or displacement. These propositions are not identical, nor are they equally true. The first proposition is more nearly true than is generally imagined. The second is, however, according to my ex-

perience, almost absolutely true, and this is the particular point to which attention is now directed.

The connection between uterine distortion and pain on locomotion has attracted little attention at the hands of previous writers. To this statement a noteworthy exception must be made. Chassaignac, in his work on "Clinical Operative Surgery," published some years ago,* in speaking of the relation subsisting between certain morbid conditions of the uterus ("deviations") and the pains and discomforts with which these alterations are associated, thus expresses himself: Question: What is the cause (says Chassaignac) of the "accidents douloureux" observed in women the subjects of uterine deviation? Answer: The "ballottements" which the deformed or displaced uterus undergoes. Thus two conditions, the deviation and the movement impressed on the organ, must be conjoined in order that the pain may be produced. Further, this author goes on to state his opinion that the reason a particular deviation gives rise to pain in one patient and not in another is, that the *ballottement* is in some way prevented. Also that relief is to be given by curing the deviation or by preventing the *ballottement*. Hence, he says, the horizontal position is so frequently effective in abolishing the pain. Hence, also, the good effect of pessaries, the benefit derived in some cases from hypogastric bandages, etc. The uterus is thus brought to a state of rest. It is thus evident that Chassaignac recognized clinically the connection above insisted on; and not only so, he explained this connection by the concussion or jarring of the distorted or displaced uterus which motion of the body produces.

Before going further, it is necessary to deal with the fact, or supposed fact, that in some cases uterine distortions do, and in others do not, give rise to painful sensations during locomotion—a circumstance which has had much to do in lending support to fallacious views on this subject. When flexions are apparently not causing particular inconvenience to the patient, it has been argued that they are not in themselves of any great consequence. The facts of the case, according to my own experience, are as follows: Of the various forms of uterine deviation it appears that some are more liable to be attended with pain during locomotion

* "Traité Clinique et Pratique des Opérations Chirurgicales," vol. ii. p. 926. Paris, 1862.

than others. Thus, take first descent of the uterus as a whole, unaccompanied by alteration of shape—cases of prolapsus, as they are termed. Now, it is the fact that such cases are really not attended with so much pain as others to be mentioned presently. It is quite true that when the uterus protrudes externally it is a serious evil, attended with grave inconveniences; but when it falls short of this, and does not protrude externally, the pain experienced may not be very noteworthy. And I have been surprised in some bad cases of external prolapse to find patients complaining comparatively little of difficulty in locomotion. Movement may of course produce in such cases friction, irritation, and ulceration of the exposed organ, but, apart from these effects, the movement itself may not be accompanied with particular discomfort.

The next form of uterine deviation is version of the uterus (rotation on the transverse axis), the organ preserving its proper shape more or less perfectly, but being tilted backward, forward, or laterally, as the case may be. Slight version may be accompanied with comparatively little discomfort. In cases of severe version, forward or backward, the pain produced by locomotion is generally very distressing. Cases of version not accompanied with flexion are, as before stated, not in themselves very common, but it is not very uncommon to meet with cases of slight version together with slight flexion. And in these latter cases the discomforts now under consideration are undoubtedly less severe than in those next to be considered.

The next category of cases is that in which there is decided distortion of the uterus, accompanied with a certain degree of version. It is in this class of cases that pain produced by locomotion is most severe. These cases furnish the instances of marked interference with locomotion, and, with few exceptions, this condition of the uterus is attended with the symptom in question in a more or less marked form. And I do not hesitate to state that I have found the condition and the symptoms associated so very constantly, that no room exists in my mind for doubt on the subject. Here we meet, as I have already remarked, with opposing statements as to the value and frequency of the association. Thus one statement is to the effect that it is common enough to meet with cases of flexion in which there is no complaint and no inconvenience felt whatever. I can only say that such cases do not, at all events, present themselves

in my practice. There are various ways of accounting for this discrepancy as to a matter of fact.

Cases vary very much in severity, and too much has been expected in regard to uniformity of symptoms when the conditions were not uniform. There is a great difference, for instance, between the degrees of flexion in the two cases of retroflexion represented in Figs. 37 and 38; and the degree of the flexion, the degree to which the uterus as a whole is sunk in the pelvis, produces necessary differences in the severity of the symptoms. As regards this particular symptom, pain on locomotion, it is one which I have hardly ever found absent when the uterus is actually distorted. This symptom is plainly of importance, but it is not one which has usually been thought much of, and may have been present even to a marked degree in some of the cases, when flexion is said to have caused no complaint or inconvenience. Another circumstance is that, when the flexion is slight, and there is more version than flexion, the pain and inconvenience may be slight in degree. Further, it must be borne in mind that the flexed uterus is not always in the same textural condition. Sometimes it is much congested; at other times not particularly full of blood. Dr. Braxton Hicks has published* observations on retroflexion of the uterus, and, in accounting for differences of opinion on the treatment of this affection, he points out the differences observable at different times in regard to the state of the uterus, as accounting for these diverse opinions. These remarks of Dr. Hicks meet, for the most part, with my concurrence. The congestion or engorgement is, no doubt, a condition which adds very much to the discomfort which a flexion produces; and in a case where it happened not to be present, the discomfort observed might be comparatively trifling. Then, again, the duration of the flexion is a matter affecting painfulness. When the case is one of long standing, the uterus acquires in some cases a kind of toleration of it, and locomotion perhaps ceases to be painful. But even in these cases it is enough to scrutinize the previous history to become aware of facts which tell directly against the notion that flexions ever occur without giving rise to very decided discomfort and inconvenience.

In the cases where pain is produced by locomotion, it is generally the fact that various positions of the body or

* *British Medical Journal*, 1877.

FIG. 37.*

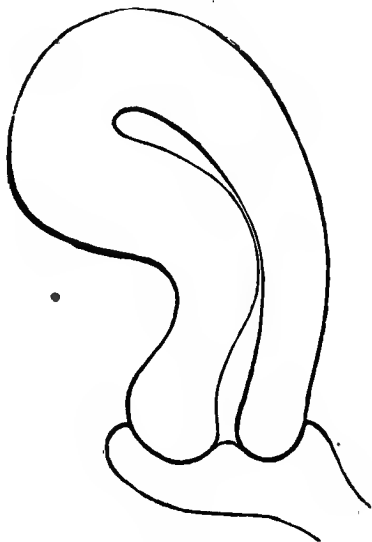
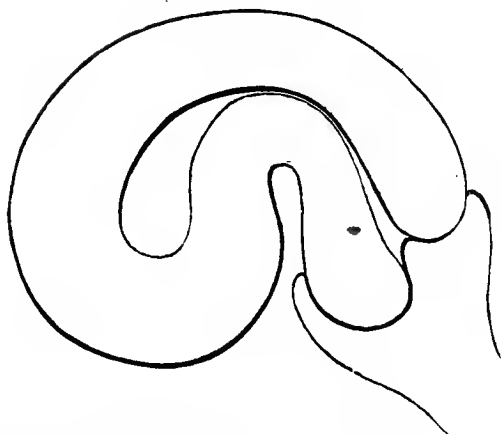


FIG. 38.



* Figs. 37 and 38 represent first and third degrees of retroflexion.

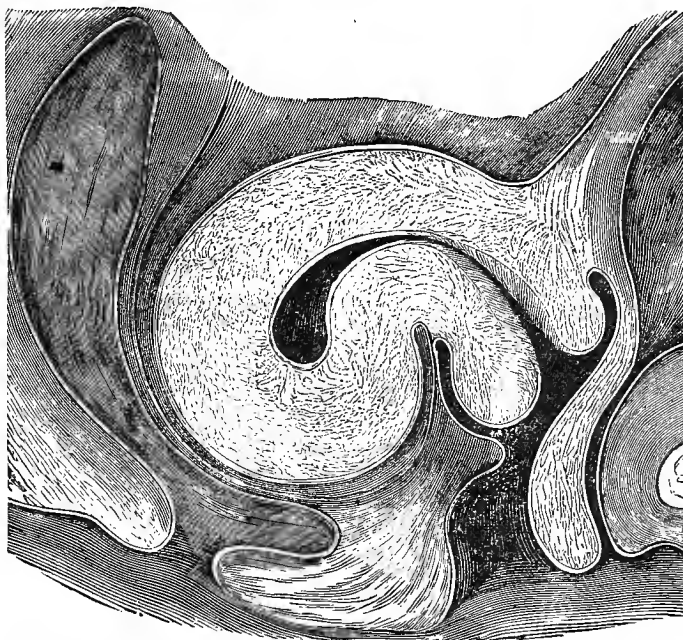
certain exertions give rise also to pain. Thus, lifting a weight, carrying a weight, stooping to pick up objects from the floor, reaching to hang up an article of dress, riding in a carriage in an ordinary sitting position, riding on horse-back, even sitting up to dinner,—any one of these exertions, and a multitude of others that might be mentioned, produce pain more or less severe. The horizontal position is in many cases the only one in which the patient is secure—and sometimes not even then—from pain.

In short, the effect of movements of the body in cases where the uterus is distorted is almost invariably to produce pain or inconvenience more or less marked. This is a striking fact, and has the greatest significance in estimating the importance of uterine flexions. Why is it, we may ask, that this movement, these exertions, produce pain in cases of uterine flexion? Chassaignac believed it to be on account of the jars or *ballottements* the uterus receives. No doubt this is to some extent true. The flexed uterus is shaken, and the concussion is doubtless in part the cause of the painful sensation. But there is another and a far more important effect to which I would direct attention—viz., the temporary exaggeration produced by the exertion or motion of the body. It is quite certain that this exaggeration and increase of the flexion do so occur. I have noted it in numberless cases; and it is, I feel convinced, the main cause of the pain. If corroborative evidence were required, it would be easily afforded by carefully investigating any marked case of this kind presenting itself, and inquiring into the effects of this, that, or the other motion in giving rise to pain; the very closest connection will then be shown to exist between the cause and effect in question. Given a certain kind of uterine flexion—determine what motion or exertion of the body would be likely to exaggerate that flexion: let the patient make that particular exertion, and it will be found to give rise to pain. Thus, in a case of severe retroflexion, such as that represented in Fig. 39, it is obvious that motion in the vertical position, walking, for instance, will have a tendency to exaggerate the existing flexion by favoring the further descent backward of the fundus uteri, but if the patient be in the prone position, as shown in Fig. 40, it is evident that in the latter position (Fig. 40) the exaggeration of the flexion is not liable to occur. This prone position is always found to be the most comfortable one in cases of retroflexion. In fact, investigation into the

effects of certain exertions will often lead to the diagnosis of the nature and variety of the flexion, and actual examination is afterward found to confirm the diagnosis so made.

Further evidence in the same direction is afforded by placing the uterus, or even by placing the body, in such a position that exaggeration of the flexion cannot be produced by motion. It is observed under such circumstances that

FIG. 39.*



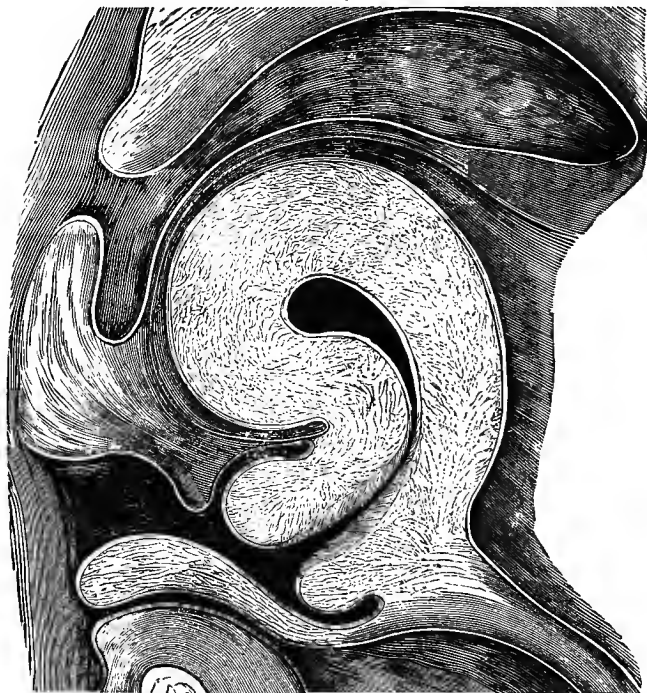
pain is no longer produced, or it is at all events very much diminished. By mechanically preventing further increase of the flexion it will be found that motion has no longer the same effect in regard to this particular symptom.

A further question remains to be answered, and it is the most interesting of all—namely, why is it that flexion of the uterus gives rise to pain, and why does the temporary

* Fig. 39 represents severe retroflexion of the uterus, the patient being in the vertical position.

exaggeration of the flexion increase the pain? We have carried the analysis to this point, that the pain and the flexion are associated, and the increase in the degree of the flexion is found to be answerable for increase in the amount of pain present. The clinical proofs of the accuracy of these statements which have presented themselves to me in the course of several years' observation are to my mind

FIG. 40.*



conclusive on these points. The answer to the further question, why a temporary increase of the flexion gives pain, involves the consideration of important pathological questions. Hitherto we have dealt with the purely physical elements concerned—the shape, outline, variations of shape,

* Fig. 40 represents severe retroflexion of the uterus, the patient being in the prone position.

etc., of the uterus. We now pass into a different territory, and enter on a ground which has been a field of contention and disagreement to an extreme degree. Pain necessarily implies an affection of nerves. When any part of the body is the subject of physical alteration or change, pain is almost universally present, this pain being directly traceable, as a rule, to the physical impression of this alteration or to some change implicating the sensitive terminal fibres of the nerves themselves. One common cause of such effect is well known to be inflammation. Inflammation of an organ shut in by a tightly constricting membrane, such as the testis, for instance, how acute is the pain! this acute character being probably due to the great pressure on the nerves necessarily occurring under these circumstances. The more closely the phenomena of pain are examined, the more evident does it seem that pressure upon, or undue tension of, the ultimate sensory portions of the nerves is the cause of the pain. Pains referable to the uterus have had various explanations. By many they are regarded as fanciful or imaginary, or due to inflammation or to neuralgia. But no intelligible and consistent explanation has, so far as I am aware, been given of the *modus operandi* of the production of these pains.

The explanation which I have to give is sufficiently simple; my only fear is that its very simplicity may prove a bar to its being accepted to the extent which is desirable in the interests of truth and progress. It is that the pain is produced by the actual compression of the nerves at the seat of the flexion. My observations have led me to conclude that the compression and condensation of the tissues of the uterus which occur at the seat of the bend is the immediate cause of this pain. This pain is increased for the moment, and it is very frequently actually brought on, by any circumstance tending to condense and compress these tissues still more. Such an event happens when, from any physical cause whatever, the uterus becomes more flexed. It is my belief that the circumstance of the additional compression is responsible for the pain. But it is to me quite conceivable that this may not be the whole of the explanation. Another theory might be well set up, and perhaps ably sustained. It might be urged that the congestion, engorgement, fulness, or whatever you please to term it, of the body of the uterus and of the cervix and os uteri, which are so frequently present in cases of flexion, are concerned

in the production of the pain. As I shall hereafter show, congestion of the two extremities of the uterus, the fundus and os, are almost constant accompaniments of decided uterine flexions, and it is susceptible of absolute proof that the more acute is the flexion the greater is the congestion and engorgement. Plainly, therefore, it may be said, Why do you not attribute the increased pain during locomotion in cases of flexion to temporary increase of the congestion? For, it might be added, this increase of congestion would produce further compression of the nerves of the body of the uterus. In fact, according to this mode of reasoning, it might be made to appear probable that the pain in question is due to increased tension of the nerves of the body of the uterus set up by temporary increase of the congestion of the part in question. Admitting, however, that much may be said in favor of this latter view, observation has induced the adoption on my part of the former idea as to the mechanism of the production of the pain. The concomitant congestion of the other parts of the uterus doubtless contributes to the pain, but it would seem to me probable that it does so mainly because it has a tendency to increase the compression of the tissues at the seat of the flexion. The presence of nervous filaments throughout the uterine tissues is generally admitted, though there are differences of opinion as to their actual size. At its central portion around the internal os uteri there are nervous filaments forming part of those tissues. When compression of the uterine tissues at this situation occurs, these filaments participate in that compression: hence the sensation of pain.

There are still other views as to the etiology of the pain in question to be considered. It seems probable that some part of the discomfort felt by the subjects of uterine flexion during locomotion is due to the stretching and tension of the ligaments or attachments of the uterus. Thus the feelings described as "sinking" and "bearing down," which are often complained of, seem due to this tension of the uterine attachments. The round ligament, the broad ligaments, and the utero-ovarian ligament are the ligaments principally affected—some more, some less. The so-called ovarian pain, which has for a long time been considered evidence of ovarian inflammation, is generally traceable, according to my experience, to uterine flexion, and to be produced by the traction of the connection between the ovary and the uterus caused by the flexion. In cases of

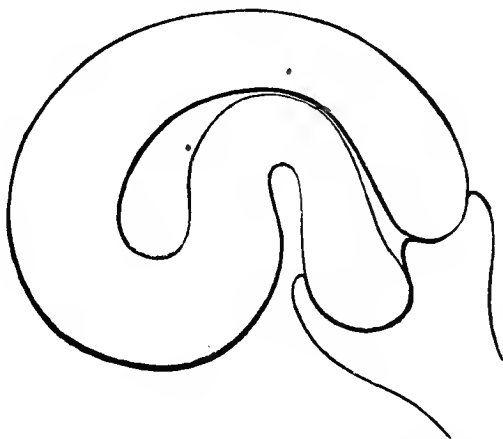
retroflexion a severe pain, situated near the groin on one or other side, is in rare cases observed, and has appeared to me to arise from tension and stretching of the round ligament. In this place also it is proper to direct attention to the fact that when the ovary is actually displaced downward, as is sometimes the case in flexion of the uterus backward, the pain produced by locomotion is very acute and severe. This displacement of the ovary is, however, by no means a common complication of uterine flexion.

3. *Undue Tenderness of the Uterus to the Touch.*—In the next place, we have to consider tenderness, or undue sensitiveness, of the uterus to the touch, and the relation of this symptom to flexions of the uterus. In a state of health the uterus is not highly sensitive to the touch. And even the passage of the uterine sound, if carefully performed, hardly gives rise to a painful sensation until it touches the fundus uteri, when there is generally evidence of slight pain. But, under certain conditions, we find the uterus extremely sensitive and painful, so much so that the slightest touch gives rise to acute pain. I need hardly say that those cases where the entrance of the vagina is acutely sensitive to the touch—hyperæsthesia of the vagina as they are termed—are not included in the present discussion. Undue tenderness of the uterus may be present in all degrees; the os uteri alone may be affected, or the posterior or anterior aspects of the uterus. In severe cases the whole uterus appears sensitive to the touch.

Respecting the connection existing between tenderness of the uterus and alteration of its shape, I claim to have established a most important generalization and conclusion, which is to the effect that tenderness of the uterus to the touch is rarely observed except in cases where flexions are present. The more acute the flexion, the more acute, as a rule, is the tenderness. Tenderness is not invariably present in cases of acute flexion, and, indeed, when cases have become quite chronic, there *may* be little or no tenderness. My proposition, therefore, is not that cases of flexion of the uterus are always attended with tenderness, but that, when tenderness *is* present, it is in all but a very few cases (I have not myself met with more than one really exceptional case) associated with the presence of uterine distortion. Possibly this may be considered a bold assertion, but I confidently make myself answerable for its substantial accuracy.

As long ago as the year 1868, I published in the *Practitioner* a paper, having for its object to show that the "irritable uterus" of Dr. Gooch is nothing more than chronic severe retroflexion of the uterus. Dr. Gooch's description of these cases is well known: "A young or middle-aged woman, somewhat reduced in flesh and health, almost living on her sofa for months, or even years, from a constant pain in the uterus, which renders her unable to sit up and take exercise. The uterus, on examination, unchanged in structure, but exquisitely ten-

FIG. 41.*



der; even in the recumbent position always in pain, but subject to great aggravations more or less frequently." Dr. Fergusson, who edited Gooch's writings some few years since, speaks of a congested condition of the uterus "altering its shape into that of a retort," as having existed in some instances, though he does not appear either to have connected the retort shape with the congestion, or to have considered it as in any way concerned in the production of the pain. In my paper I proceeded to show that this retort shape of the uterus was a necessary part and parcel of the affection, and expressed my opinion that these so-called cases of "irritable uterus" were actually

* Severe retroflexion of the uterus.

cases of chronic retroflexion. Since this paper was written I am not aware that any refutation of this view has been published; and the only further observation I have to make on the subject of Gooch's irritable uterus is, that I have since seen many cases of this kind in which the condition of the uterus amply sustained the view in question. But there is a slight qualification to make—viz., that the same symptoms may be observed in connection with anteflexion of the uterus as with retroflexion. The typical and most severe cases are those of retroflexion, but in severe cases of anteflexion the symptoms may be very much the same. Further inquiries and observations have made me acquainted with the close connection existing between distortion of shape and tenderness of the uterus, of which Gooch's cases of irritable uterus constitute well-marked and extreme instances.

A very acute flexion is usually attended with great congestion. The conjunction of the two gives rise to the greatest degree of tenderness. And, inasmuch as the uterus may become more bent when the fundus is turned backward than when turned forward, the retroflexion cases are, as a rule, the most severe, and accompanied with the greatest tenderness. In cases where there is much congestion the tenderness is more evident when the body of the uterus than when the cervix is touched. In backward flexions the fundus is often found so tender that the merest touch gives acute agony, and the act of defæcation is attended with great suffering. In acute anteflexions the fundus is generally less easily felt, owing to the intervening bladder, but the presence of acute sensitiveness of the fundus can often be substantiated in these cases.

It is worthy of mention that considerable sensitiveness to touch is sometimes found on examination in cases where other symptoms—pain on locomotion, etc.,—have been slight in degree; and under these circumstances the examination reveals the grave nature of the case.

The sensitiveness of the uterus in cases of flexion may be associated with slighter degrees of congestion. It may be present also in cases where the congestive stage has passed away, leaving the uterine tissues hard and hypertrophied. In these latter cases the tenderness is less universally spread over the uterus.

Extreme sensitiveness is met with in many quite chronic cases of flexion at the internal os uteri or its neighborhood.

The existence of this sensitiveness is, of course, only ascertained by the use of the sound. This, however, seems the place to mention it. Under these circumstances there exists a severe chronic neuralgia at the internal os. The subjects of this affection have well-marked pain on locomotion, always situated in some one spot. Thus, in two very chronic ante flexion cases where this severe internal sensitiveness existed, walking always occasioned so severe a pain in the inguinal region that it had to be given up, and the sofa had become always necessary.

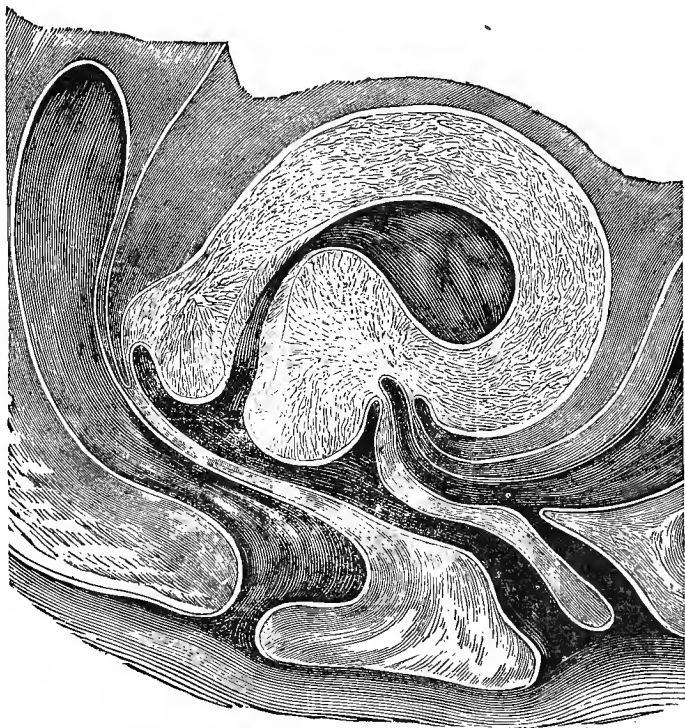
Dysmenorrhœa.—Uterine flexions are not the sole cause of dysmenorrhœa. Again, flexions of the uterus are not always attended with dysmenorrhœa. One of the most frequent effects of flexion of the uterus is, however, to produce impediment to the escape of the menstrual fluid—an effect generally due to compression of the uterine canal at its narrowest part, viz., the internal os uteri. The compression has the same effect as if there were an actual stricture of the part. Flexions of the uterus are in practice found to be the principal cause of the severe *pain* felt during menstruation as well as of the extreme *difficulty* with which the exit of the menstrual products may be attended. Dysmenorrhœa is often the first symptom observed in cases of flexion, and although slight dysmenorrhœa is no proof of the existence of severe flexion of the uterus, it may be stated that when the dysmenorrhœa is chronic it may be assumed that there is an impediment to the escape of the menstrual fluid, which impediment is *in all probability* due to the existence of uterine flexion. In the chapter on Dysmenorrhœa further remarks on this subject will be found.

Leucorrhœa.—Flexions are a very common cause of leucorrhœa, and there are few cases of flexion in which leucorrhœa, to a greater or less degree, does not occur. In the chapter on Leucorrhœa further remarks on the subject will be found. Here, however, it is necessary to point out the particular relation which subsists between flexions of the uterus and “leucorrhœa from retention,” as it may be appropriately termed. One of the effects of flexion not rarely observed is retention of the secretions of the uterine cavity within it, owing to the retort shape of the uterus, and the (virtual) closure of the internal os uteri.

There are a certain number of cases occurring not very rarely in which, during the inter-catamenial intervals, there are observed from time to time—perhaps once in two or

three days, and generally particularly during the week or ten days immediately following catamenial cessation—discharges of a puriform character, coming on suddenly, lasting for a brief period only, and then ceasing. There is a

FIG. 42.*



puriform leucorrhœa *occurring in gushes*. This occurrence is due to the existence of chronic flexion and arises from imperfect emptying of the uterus. At the close of the ordinary menstrual period something is still left in the uterus. This unevacuated fluid undergoes changes resulting

* Fig. 42 shows the third stage of anteversion with distension of cavity and thickness of uterine walls, such as may be found in cases of chronic menorrhagia and leucorrhœa occurring in gushes.

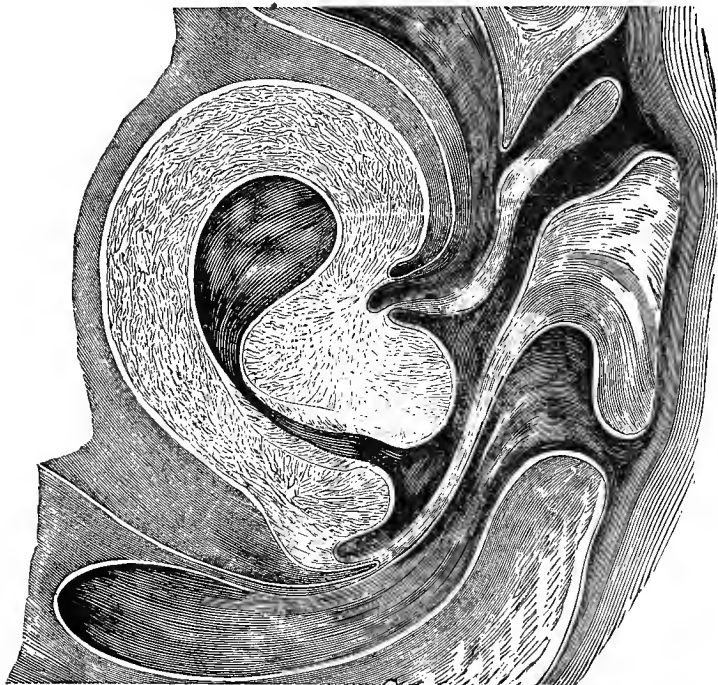
in its conversion into puriform fluid. The uterus becomes distended with this accumulation. It is increased by the addition of further fluid of a watery character, poured out by the lining of the uterus, and when distension reaches a certain point, it is expelled. • That is to say, it is partly expelled, but after a time further distension occurs, followed by fresh expulsion. I have observed many cases of this kind—in fact, the occurrence of puriform leucorrhœa coming away in gushes is by itself almost diagnostic of the existence of a chronic flexion of the uterus, and, during an experience of some years, this sign has proved of great value. Patients suffering from this affection sometimes describe what they term “little abscesses” bursting from time to time. In certain rare cases the retained uterine contents are actually offensive to the smell, the fluid having become putrescent before it is discharged. The uterus becomes irritated, and the lining membrane secretes more fluid than usual; there is, in short, what is termed endometritis.

Menorrhagia.—The menstrual periodic discharge is frequently increased in quantity in cases of flexion, though by no means constantly so—for the quite opposite effect may be noted. Nevertheless, taking all cases of menorrhagia, one with another, the commonest cause is found to be either uterine flexion, or some of the secondary effects resulting from uterine flexion.

Menorrhagia occurs often in consequence of the impediment to escape of blood; the blood accumulates in the uterus, distends it, and is from time to time expelled in gushes. The process observed is sometimes like that of labor on a small scale, the patient experiencing severe recurrent pains; and after a time these pains result in expulsion of blood in considerable quantity: here we have dysmenorrhœa and menorrhagia combined. After a time the uterus becomes hypertrophied, its cavity permanently dilated, and the area of its internal surface proportionately extended. Then the patient becomes subject to permanent menorrhagia, and the quantity lost at each period may be exceedingly great. Examination reveals probably the existence of long-standing flexion, with considerable hypertrophy of the whole uterus; or the whole organ may be found in a loose, soft, congested, sponge-like condition, the blood poor and watery in character from long-continued losses, and the large retort-shaped uterus pouring out much blood for many days together.

The presence of clots in cases of menorrhagia is sometimes noticed. Sometimes such clots are formed in the vagina, but more generally they originate in the cavity of the uterus. Retention of blood is, probably, the first event in such cases; the blood so retained becomes clotted, and

FIG. 43.*



has finally to be expelled. The passage of the clot through this narrow internal os uteri necessarily occasions much pain. The dysmenorrhœa is most severe in cases where clots have to be got rid of, and the pain is sometimes of a most agonizing character. In some cases the clot never is

* Fig. 43 represents severe anteflexion with enlarged uterine cavity, as in Fig. 42, but the position of the pelvis is here altered, as if the patient were recumbent on the back. The tendency of this position is obviously to throw the fundus upward and backward.

expelled as such, but becomes broken up. No doubt some of the cases where a sanious leucorrhœa is observed for a few days after the regular period is over are cases of this kind; the clots retained break down, and the *débris* are gradually, but slowly, expelled.

It must be further remarked that the difficulty experienced by the uterus in relieving itself of the retained products in cases such as above described is materially increased by the dependent position of the pouch containing the fluid. When the patient is upright, and the body of the uterus strongly bent forward or backward, the action of gravity is opposed to the evacuation of the uterine contents (see Figs. 23 and 18). Thus, in the retort-shaped uterus, the enlarged pouch hangs downward, forward, or backward, as the case may be, and the fluid must move really upward, in order to pass through the internal os uteri, where the obstruction which exists further adds to the difficulty. The double difficulty of moving upward in a direction opposed to the action of gravity and moving round a corner presents itself under such circumstances. Clinical observation offers convincing proofs of the operation of these natural laws. Thus it may be found that in a case of ante flexion, with purulent retention, the discharge is free and continuous so long as the patient remains in bed, but on rising in the morning it suddenly ceases, appearing only in gushes at intervals during the day, and on lying down again at night a further comparatively free and continuous escape of fluid occurs.

Amenorrhœa.—The effect of uterine flexion in arresting the discharge for a time has been mentioned, but in connection with menstrual retention only. In a certain number of cases, however, the discharge becomes gradually less and less, the periods become habitually "scanty," and in a few the discharge ceases. Actual suppression of menstruation for some months, or its premature termination at a comparatively early age, is now and then observed, in cases of acute flexion. Probably the compression of the organ which is the effect of the flexion has much to do with it. The uterus having its circulation interfered with is no longer capable of carrying on its function properly.

The whole process is occasionally witnessed. In a known case of flexion, menstruation is for a time scanty. Each month it is less in quantity. By and by a month is passed over without discharge. After a time the interval is longer.

And, concurrently with these effects, other symptoms are noticed, which give evidence that the flexion has become aggravated. The flexion is now dealt with and treated, and the amenorrhœa ceases. Cases of this kind are interesting and convey important clinical lessons (see chapter on Amenorrhœa).

Sterility.—Any circumstance producing imperviousness of the external or internal os uteri must necessarily produce sterility, and flexions are responsible for this result in very many cases, the narrowed condition of the internal os obstructing the passage of fluid upward. But in very many cases the mere obstruction is not the sole cause of the sterility. Another circumstance is to be taken into consideration—viz., the altered condition of the lining of the body of the uterus, which, as previously pointed out, is liable to be produced by retention of secretions within the uterine cavity. These retained secretions have doubtless a powerful influence in deranging the physiological process and damaging the products of conception. Further, an irritated altered mucous membrane, such as must be present in such cases, cannot offer a proper surface for the attachment and growth of the ovum, even supposing it has been impregnated and has descended into the uterine cavity.

Abortions.—By far the most common cause of abortions is the existence of flexion of the uterus. The almost incessantly observed conjunction of the two elements—existence of a known flexion of the uterus and liability to abortion in the same individual—has led me to this conclusion. There are undoubtedly other causes of abortion—syphilis, lead poison, accidents, falls, blows, mental emotions, etc. But, after all, cases referable to these heads collectively form a very small percentage of the number of cases of abortion actually observed.

The connection between retroflexion of the uterus and liability to abortion is tolerably well recognized. But it is not so well known that ante flexion is a rather common cause of abortion.

The proof of the truth of the statement that abortion is often due to uterine flexion is necessarily to be obtained only from careful clinical observations. Such observations only require to be made in order that the proofs may be obtained necessary to convince others as they have convinced me. Clinical histories, such as the following, constitute important evidence. In a case of known ante flexion,

pregnancy occurs, and is shortly followed by an abortion. In another case, a flexion is undergoing treatment; becomes relieved up to a certain point; pregnancy occurs, and abortion happens. In another case also where flexion is known to exist, pregnancy happens, and the patient goes to full term; recovers from her confinement; becomes again pregnant, and is threatened with an abortion. On examination it is found that the old evil has recurred; the uterus is in a state of flexion. Take another class of cases. In a certain case abortion happens, the ovum partly escapes; the thickened decidua and commencing placenta are retained in utero. Examination is made, and the uterus is found acutely anteflexed or retroflexed. A succession of such cases present themselves, the circumstances being a little varied. What other opinion can be arrived at than that the abortion is due to the flexion? I assume, of course, that the operation of other possible causes of abortion is duly regarded, and the particular case excluded from these categories. Complete the proof: trace the further history of these very cases, and suppose it to be found that the phenomena described have a great tendency to recur. Let this kind of observation be made over and over again, and conviction naturally follows.

The following table contains a statistical account of cases in hospital and private practice, with interesting particulars in reference to the question as to the influence of flexion of the uterus in producing sterility and in inducing a liability to abortion. Some of the facts were observed in hospital practice two years ago. A second series of facts are the results observed in private practice. And the two series of facts are so arranged that they can be compared. The general conclusion to be drawn is that, taking 100 patients affected with flexion of the uterus, it may be expected that in about one half of them sterility or abortions will occur. There is a remarkable coincidence in regard to the two classes of cases, hospital and private, there being sterility or only abortions in 34 per cent in both series. So also in regard to fecundity, for, in the hospital series, 65 per cent bore children (including 11 per cent who also had abortions), and in the private practice series 67 per cent had had children (including 17 who had also had abortions).

Of those absolutely sterile—that is, who had never had a pregnancy at all—there were 24 per cent of the hospital cases, and 28 per cent in the private cases.

Abortions occur very frequently, as evidenced in the statistics below. There were some few cases (10 per cent in the hospital series and 5 per cent in the private series) who had never had a child, but had had abortions, and in addition to these there were cases in which, although the patient had had children, there had been noticed abortions also—11 per cent in the hospital series, and 17 per cent in the private series. The *total* percentage of cases of flexion

Frequency of Sterility and Abortions in Cases of Flexions.

	Sterile or only abortions.	Absolute-ly sterile: no preg-nancy.	Abor-tions only.	Child-ren & abor-tions.	No abortion.	Facts as to number of children.
<i>Hospital Practice.</i> Cases of uterine flexion, 1865-1869: 235 { 135 antelexion } { 100 retroflexion }	81 (34.4 p. c.)	57 (24.1 p. c.)	2 (10 p. c.)	27 (11.4 p. c.)	127 (54 p. c.)	
<i>Private Practice.</i> Cases of uterine flexion, 1873-1879: 668 cases. (499 married, 169 single)						
499 { 360 antelexion } { 139 retroflexion }	129 42 { 34.2 p. c. }	107 35 { 28.4 p. c. }	22 7 { 5 p. c. }	67 22 { 17.8 p. c. }	164 75 { 47.8 p. c. }	51 patients had only 1 child. 21 had only 1 child.

in which abortion was noted was, for hospital cases 21 per cent, for private cases 22 per cent—figures which are almost identical.

The above figures have been extracted with great care from records of cases in my possession.

It may be well in the next place to speak of what may be termed "secondary" sterility in connection with flexions of the uterus. There is abundant evidence that flexions arising after labor give rise not seldom to sterility. The patient has had one or two children but has become afterward sterile. The following table gives, from records in my possession, statistics in regard to the influence of flexions in producing sterility in women who have had children:

Cases of Fertility with Subsequent Sterility.
(Private Practice.)

	Number of cases.	Average number of years elapsed since.	Variation in number of yrs. expired since.
One child only (over 1 year expired since)...	72 { Anteflexion 51 Retroflexion 21	Anteflexion 6.4 years. Retroflexion 8 years.	Anteflexion 1 to 22 years. Retroflexion 1 to 24 years.
Two children only (over 1 year expired since)...	50 { Anteflexion 38 Retroflexion 12	Anteflexion 4.4 years. Retroflexion 5.1 years.	Anteflexion 1 to 16 years. Retroflexion 1 to 14 years.

Disturbance of Functions of the Bladder.—These constitute a class of symptoms rather common in cases of uterine flexion. Great frequency of micturition is often observed in anteflexion cases. This symptom is sometimes very distressing, there being a perpetual necessity for evacuating the bladder, as often, in one case, as every five or ten minutes. Retention of urine sometimes occurs as a consequence of flexion—more often from retroflexion. Incontinence of urine is occasionally observed as a result of retroflexion. Extreme pain in the bladder after evacuation of its contents is sometimes noticed in cases of anteflexion, apparently due to pressure of one wall of the empty bladder on the other.

Taken as a whole, the bladder symptoms are not always observed in cases of flexion, but they sometimes constitute the chief or most distressing of the symptoms of which the patient complains.

Disturbance of Functions of Rectum.—In cases of uterine flexion the function of defæcation is often interfered with in various ways, the patient finding often a difficulty in evacuating the contents of the rectum, in consequence of the pressure of the uterus upon it. The pressure of the uterus acts in a kind of valvular manner, and, the more the patient strains, the more complete is the closure. In other cases, defæcation is attended with considerable pain. The most aggravated cases, and they are not very commonly met with, are those in which there is retroflexion, accompanied by rectocele. The perineum is partly destroyed, and the rectum protrudes a little through the vaginal aperture. The uterus is retroflexed, and presses down the rectum, and it thus obstructs the canal; a state of things may then arise which produces intolerable anguish to the patient. The

rectum may become ulcerated. At the part where the rectum projects into the vagina there is a bend, and in this position ulcers are liable to form. This is an extreme case, but the right explanation of such a case is of some moment. Retroflexion may thus, sometimes, produce what appears to be a serious disease of the rectum. In some cases, anteversion leads to very serious interference with defæcation. Chronic and troublesome diarrhœa is sometimes caused by retroflexion of the uterus.

Pain on Intercourse—Dyspareunia.—This is a symptom and effect of the presence of flexions of the uterus which deserves attention. There are of course other conditions of the generative organs capable of giving rise to the symptom in question, but, certainly, flexions of the organ are most common causes.

Reflex Nervous Symptoms.—The symptoms included under this heading constitute a most interesting class. The existence of a relationship between these symptoms and the presence of uterine flexion is only now beginning to be known and admitted by uterine pathologists. "Nausea and vomiting," "hysteria," "convulsions," "mental derangements," are the more important of these reflex symptoms. It is impossible to discuss the whole question in this place; the reader is referred to the separate chapters which will be found devoted to these subjects. Here it is necessary, however, to say that the clinical evidence of the very close connection as cause and effect between uterine flexion and these reflex nervous symptoms is most distinct and clear. There cannot be a question that, in the future, as observations are increased in number the truth of this statement will come to be universally admitted.

Reflex nervous symptoms are, however, by no means always present in every case of uterine flexion.

CHAPTER XVIII.

DISPLACEMENTS AND DISTORTIONS OF THE UTERUS (FLEXIONS)—6. GENERAL PRINCIPLES OF TREATMENT.

PRINCIPLES OF TREATMENT.—Indications 1.—Restoration of General Strength. 2. Restoration of Uterus to Proper Shape and Position.

DIFFICULTIES ENCOUNTERED.—Question of Necessity for Examination—Definition of General and Local Treatment—Curability of Flexions—Various Causes of Difficulty.

GENERAL TREATMENT.—Restoration of Nutritional Power and Activity—Rest, how to be carried out—Utilization of Influence of Gravity—Attention to Condition of Bowels.

LOCAL TREATMENT.—Positional or Postural Treatment—Prone Kneeling Position—Horizontal Position. Use of the Sound repeatedly—Cases adapted for it. Use of Sound combined with Dilatation of Canal by means of a Dilating Sound. Treatment by means of Stems: Cases requiring it—its Value and Applicability. Use of Tents. Incision of the Uterine Canal. Vaginal Pessaries—General Method of Action—Cases suitable for. Necessity for conjoint Postural Treatment and use of Sound. Other Requirements when Vaginal Pessaries are employed. Material of Vaginal Pessaries. General Summary. Palliative Treatment. Use of Hot-water Injections. Opiates. Treatment of the accompanying Congestion.

Various modifications in regard to detail and mechanical procedure are required in different cases of uterine flexion. Here, however, it is intended to describe the general principles of treatment of these affections.

The principal indications are:

1. To restore or improve the general strength and vitality of the patient, almost always in a state of deterioration more or less pronounced.

2. To restore the uterus to its proper shape and position.

The above indications are formulated in conformity with the general views, which have been set forth in previous pages in reference to the nature and cause of flexions of the uterus. It will be found in practice impossible satisfactorily to treat cases unless both of the indications alluded to receive due attention.

Whether the first or the second indication is the more important will depend on the nature of the particular case.

In cases where the flexion is slight in degree and recent in occurrence, general measures may prove entirely effectual, the uterus participating in the general improvement produced by the treatment in question.

When, however, the flexion is severe and of long standing, no amount of attention to the general treatment will prove efficacious in curing the flexion, local treatment being necessary before real improvement can be expected.

In severe and long-standing cases local treatment alone is insufficient. General treatment must be associated with it or disappointment will be experienced.

At the outset the question arises as to the employment of local treatment of the uterus in cases of unmarried women affected with the disorders now under consideration. It may be well to consider how best to obviate these difficulties.

The first difficulty is as regards the *diagnosis*. In young unmarried women the diagnosis is at first of course only presumptive. Persistence of particular symptoms for many months in succession, such as marked deterioration of health, obstinate nausea, dysmenorrhœa, continued difficulty in locomotion, continued suffering of some kind referable to the uterus; under these circumstances a complete diagnosis of the case should be made, instead of waiting, as is sometimes done, two or three years before any reliable information is attempted to be gained. In many cases a tolerably exact notion of the case can be obtained by an examination per rectum, or it can be thus ascertained if a further and more exact investigation is required. The diagnosis made even in this imperfect way is of service in pointing out what general method of treatment is likely to be of use (decision, for instance, between ante flexion and retro flexion), or whether the affection is so severe as to make a vaginal examination imperative. In young unmarried women an anæsthetic is frequently advisable in cases where it is decided to make a vaginal examination. It is impossible to lay down a strict line of conduct for all cases. On the one hand, it is improper to subject young women to vaginal examinations unless they are considered necessary after proper consultation on the subject. On the other hand, it must be borne in mind that the foundation of a life-long condition of invalidism and general inefficiency may be laid by two, three, or four years' neglect of a severe uterine flexion, and consequently that delay in making a *necessary* examination may be most injurious to the patient. In cases where the symptoms have existed for some years there should be no scruple in insisting on the necessity for a proper examination.

Some explanatory remarks are here required respecting what is meant by general and local treatment. It has already been stated that general treatment has often a local effect. As regards local treatment, the most efficacious is mechanical. By mechanical treatment is not meant, however, the use of instruments or necessarily of instrumental procedures. There are methods which are in their mode of action strictly mechanical—utilizing the force of gravity, rest, and the like—although not including surgical procedure in the ordinary sense of the word.

Curability of Uterine Flexions.—The apparently intractable character of certain forms of the affection has led some authorities to conclude that flexions are incurable. As a general statement this is undoubtedly a mistake, although in some cases a complete cure is no doubt very difficult to obtain.

a. One source of difficulty is weakness of the uterus from malnutrition. So long as the tissues of the organ remain soft and give way to pressure, the cure of the flexion is a matter of impossibility.

b. Another is the atrophy often present in long-standing flexions at the seat of the bend, which has this effect, that while it may be easy to maintain the organ artificially in its normal shape, the moment the assistance ceases the flexion recurs. The uterus has virtually lost its stem.

c. Another is the rigidity of the uterus. It has become set in a certain abnormal shape, and though it may be unbent by means of the sound, the flexion recurs directly it is withdrawn. This rigidity may be accompanied with atrophy around the internal os, or not.

d. Another difficulty is the presence of adhesions tying the fundus down in its abnormal position.

e. The most common difficulty, however, is the absence of an accurate diagnosis of the physical condition of the uterus in the particular case.

The use of the sound is an important aid in determining the curability of a given case of flexion. At all events, it is possible by its means to measure the rigidity of the uterus. By gently unbending the uterus by the sound, and then withdrawing it and observing how quickly it returns to the flexed state, the degree of rigidity is indicated. In a long-standing severe retroflexion we suppose, for instance, that the sound raises the fundus up to its proper position, but immediately it is withdrawn the fundus is felt by the finger

to resume its old position. This indicates considerable rigidity; but the fact that the uterus can be raised by the sound shows that a cure is possible. The degree of resistance encountered in changing the form of the uterus by the sound is in some degree a measure of the difficulty of the cure.

The presence of atrophy in the uterine wall is indicated by the touch; the sound having been previously introduced, the thickness of the uterine wall at the flexion can be estimated by the pressure of the finger opposite this situation.

Some general statements may be made as to the curability of different cases.

The cases are most amenable to treatment in which the affection is of not over two years' standing, and the uterus not very resistant to the restitution of proper shape by the aid of the sound.

Cases are tolerably amenable to treatment up to the age of thirty, even when the affection has lasted some years, provided that there is no considerable parietal atrophy, that the reposition by the sound is not very difficult, and that there are no other complications.

After the age of thirty the cure of long-standing flexions becomes more and more difficult, and cure at the age of forty, for instance, of a severe retroflexion of ten years' standing would be very difficult.

As a rule it may be stated that the time required to effect a cure is in direct proportion to the duration of the disease. Recent cases are cured most readily. Recent cases, too, are cured most completely, for long-standing flexions, even when cured, have a great tendency to recur. Thus, I could give particulars of cases both of ante flexion and retroflexion cured so that the patients conceived and had children, and the flexion recurred intermediately three or four times—*i.e.*, once after each labor was over—requiring treatment, which was again and again successful. It is probable that when proper attention is paid to the general treatment, the cure of uterine flexions will become more complete. My own experience gives reason for this conclusion.

Lastly, it is to be stated that particular kinds of flexion are more difficult to cure than others, as will be more particularly described later on (see chapters on Ante flexion and Retroflexion).

Dr. Paul F. Mundé* says, "Permanent relief, *cure*, can

* *Amer. Jour. of Obstet.*, Oct., 1881.

be expected and will be obtained only when the displacement is of recent origin, especially when it has been produced by some sudden physical shock, or when the complete tissue-metamorphosis accompanying puerperal involution aids in restoring to the uterine supports and to the uterus itself their original and healthy tone."

Pessaries, according to Dr. Mundé, give temporary relief, but cure only in a few cases. He prefers the wearing of astringent vaginal tampons introduced daily, for some cases of ante- and retro-displacement, and considers this method the only efficient and safe remedy for most cases of procidentia. He contends that this treatment is preferable to the use of hard or soft pessaries.

Dr. Mundé's views as to the difficulty of cure are to a certain extent correct, but I think the difficulty is overstated. The importance of seizing the time of puerperal involution for remedying the shape of the uterus is certainly great, as Dr. Mundé points out; but, unfortunately, in many cases there is no pregnancy to help us.

General Treatment.—The first object is to maintain the nutrition of the body in a state of activity. Attention to this is specially required in cases where there is much general debility, and where it is known or suspected that the uterus is in a condition of undue softness. Many months may elapse before much improvement is observed in regard to this special point. In a case of chronic starvation of some years' duration the nutritional activity takes long to restore. How this is best to be effected has been already described (see p. 128). But it must here be stated that experience renders it evident that the secret of success in the treatment of chronic flexions with the uterus in a weak, atonic, soft condition is perseverance in careful feeding.

There are not a great number of cases in which care in the matter of nutrition can be dispensed with. It is not rare to see cases of chronic flexion in which the prostration is so severe from long-continued semi-starvation that it demands at first almost exclusive attention. The principal malady for the moment is in fact the starvation, and great care is required even to save the patient from perishing from its effects. Such extreme cases are chiefly noticed where the flexion has set up a chronic obstinate vomiting, and the patient has been thus effectually deprived of nourishment for a long time.

Rest is a most important part of the general treatment.

The indication is to take off all pressure from the uterus. The horizontal position, modified in various ways, best effects this.

The extent to which rest must be insisted on depends on the severity of the case. In some cases it is merely necessary to order the patient to abstain from certain exertions and to walk little; in others, on the contrary, no good can be done without insisting on the most absolute rest, and that to be maintained for some time.

Certain errors are prevalent in regard to what constitutes rest. Sitting in the ordinary position in a chair with a vertical back is not rest for cases of flexion of the uterus; nor is riding in a carriage rest under these circumstances.

Rest is more particularly necessary at the menstrual periods, for the troublesome symptoms are then likely to be aggravated. There are various other precautions to take which will be suggested by reading over the list of *causes* of uterine flexion given at page 180.

Experience has convinced me that in chronic cases the persistent action of the force of gravity can be utilized very largely by a well-adjusted system of rest. In cases where mechanical internal appliances are employed this agent should be carefully brought in as an ally in the treatment. In this way only can some of the difficulties of chronic cases be overcome.

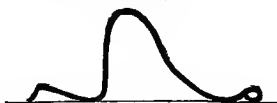
The scientific employment of rest in association with feeding, massage, etc., which has been largely employed by Dr. Weir Mitchell in America, and which has been alluded to in a former chapter, is precisely the treatment adapted to the cases now under consideration.

The condition of the bowels is always a matter demanding attention. The bowels should be opened daily, either by means of an enema, of half a pint of tepid water or a minute dose of some aperient found to suit. It is most important to prevent the straining and forcing liable to occur when the bowels become constipated; and it may be assumed that such precautions will always be required in patients who do not take regular exercise.

Local Treatment.—The first procedure to be adopted in regard to the local treatment is what may be termed "postural" treatment. Of late years I have employed it with great advantage, either by itself or as an assistance to other local measures. In the United States, Dr. Campbell, of Georgia, has particularly advocated the knee-and-breast

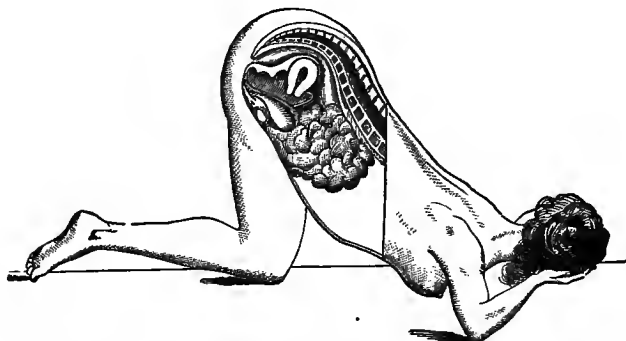
position in the treatment of retroflexions of the non-gravid uterus. The accompanying figures illustrate this principle

FIG. 44.



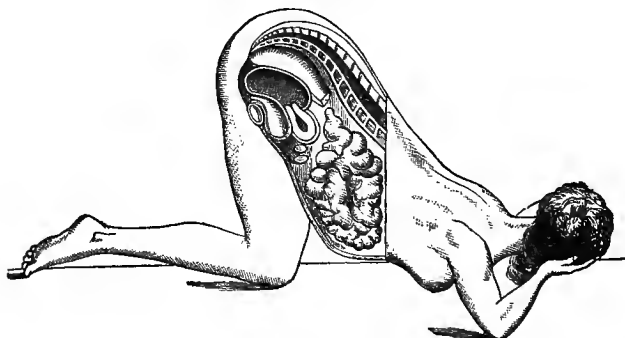
of treatment. Fig. 44 is an outline of the position taken by the patient. Fig. 45 shows the uterus in a retroverted

FIG. 45.



position; the patient being in the knee-breast position it is evident that the weight of the uterus will tend to throw

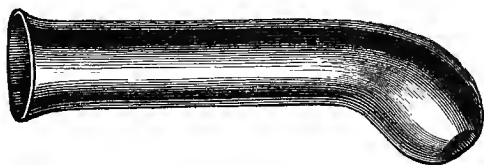
FIG. 46.



the body of the organ forward. Fig. 46 shows the patient in the same position with the uterus turned forward as just

described. Fig. 47 represents an air-tube which Dr. Campbell recommends to be inserted in the vagina so as to allow the air to enter it, the object being to facilitate the movement of the body of the uterus into its normal position. The necessity for the use of the air-tube has been disputed. I have largely employed the postural treatment as described, but without the air-tube, and the effects have appeared to be satisfactory. I have found the knee-and-breast posture very serviceable in cases of uterine flexion, whether backward or forward. The patient must be directed to maintain this position from two to four or five minutes several times in the day, or whenever it is convenient to do so; and this is to be kept up for some weeks. Postural treatment can of course be carried out by the patient herself, which is an advantage in many cases where

FIG. 47.



other methods of local treatment are inapplicable. Postural treatment is not sufficient by itself in severe cases, but it is always available as an adjuvant to other procedures.

In cases of forward displacement of the uterus the horizontal position on the back is the best, the effect being increased by placing a pillow under the sacrum. This position is the worst possible for cases of backward displacement, and it is not rare to meet with cases of retroflexion rendered chronic by the patient having been kept lying on the back for a considerable time. In cases of backward flexion the patient must be made as a rule to lie on the side, or at all events not on the back. These points will have to be further discussed later on.

We now come to special methods of internal local treatment.

The *sound* is an instrument by which the shape of the uterus can be rectified. A repetition of this rectification at intervals is a method of internal treatment of great value. The operation consists in carefully introducing the sound beyond the seat of the flexion, and then gently turning it

round so that the concavity is turned the opposite way. The sound should be very slightly curved, should be gently inserted, and no force whatever employed. By holding the sound in the uterus for a few minutes after the flexion has been reduced by its means, a greater effect is produced. This method of reduction may, if carefully done, be repeated every two or three days if necessary: the plan offers a means of gradually reducing an obstinate flexion. It is frequently found advisable to conjoin the use of a pessary with treatment by the sound, but the double treatment is more likely to produce irritative symptoms, and if a vaginal pessary be at the same time worn, the frequent repetition of the use of the sound is not so well borne.

In unbending the uterus by means of the sound, great gentleness should be employed, and it should be done slowly. It is advantageous to use a nearly straight sound, because the torsion of the uterus effected by it is less. It is more difficult, of course, to introduce a nearly straight sound, but this method of treatment should never be employed by any one unable to thread an acute flexion with a nearly straight sound.

The dangers attendant on the above treatment are irritation and abrasion of the lining of the uterus and production of a quasi-pyæmic or actually pyæmic process; great care is therefore required to avoid abrasion or injury of the uterine lining.

The "sound" treatment is not adapted for cases in which the uterus is very soft. It should not be employed too near to the time of the menstrual period, either before or after, and it is better that the patient remain recumbent for half an hour or so after use of the sound.

Sound combined with Dilatation.—A method of treatment consisting of use of a dilating sound is sometimes very effectual. It is not adapted for cases where the uterine canal is very tortuous, but when it has become tolerably easy to introduce a nearly straight ordinary sound, the process now to be described can be adopted.

The instrument I employ for the purpose is one which has been copied from a larger-sized one, used by the late Dr. Rigby, and made for me by Coxeter. The principle is not new, being that of the glove-stretcher, but the dilating blades are small and can be introduced easily. After introduction they are separated by a screw action, and very great force can be made to bear at the point where dilatation

FIG. 48.*

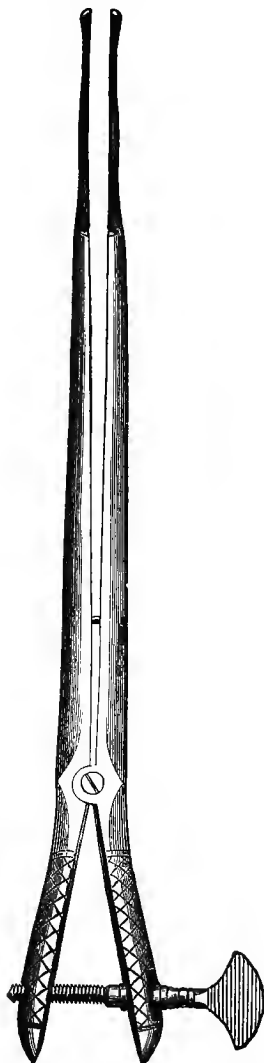


FIG. 49.*



* Figs. 48 and 49 represent Graily Hewitt's Uterine Dilator. Fig. 48 is a reduced drawing. In Fig. 49 the blades are shown the actual size.

is most required, viz., the internal os. This instrument must be used with great caution and care. The object is to gradually open out the uterine canal. This dilatation should be effected at intervals of two or more days, and should be slight. It is not safe to effect dilatation by this means unless the instrument can be introduced without abrading the uterine canal. On the whole it is safer also to avoid using the dilator when vaginal pessaries are being employed.

The metallic dilator above described should have a slight groove cut on the side opposite the small projection indicating the depth of the uterine canal. By this means the operator is able to tell when the instrument is properly and sufficiently inserted.

The system of dilatation above described is in principle identical with the gradual dilatation by a succession of bougies employed some years ago by Dr. Mackintosh for the relief of dysmenorrhœa.

A more rapid and extensive dilatation of the uterine canal has been employed by Schultze, the object being at one operation to produce considerable enlargement of the uterine canal. The procedure consists first in dilating the canal by tents, and then forcible dilatation is effected, by means of a two-bladed instrument, in such a way that the structures of the cervix are made to give way, and a large-sized canal at once procured.

The treatment of flexions by means of the *Uterine Stem* must be next considered. The object of the use of the stem is to maintain a continuous reduction of the flexion, and to keep the uterine canal straight, with the notion that after employment of this treatment for some weeks, or months, or longer, the uterus will be made to assume permanently a normal shape, and the uterine canal cease to offer obstruction to menstruation and to interfere with other of the uterine functions.

With certain reservations, which will be presently pointed out, there is no doubt that the uterine stem treatment offers one of the best methods of dealing with cases of chronic flexion of the uterus. Many condemn the practice, and some consider it justifiable, and reserve it for exceptional cases.

There are various methods of using an intra-uterine stem, some of which are much better and safer than others.

The requirements, according to my own judgment, are—

1. The stem should be smooth, rounded at the extremity,

of an incorrodible material, and should not project more than one third of an inch into the cavity of the body of the uterus—*i.e.*, the whole length of the stem should not exceed $1\frac{2}{3}$ or 2 inches.

2. It should be attached to or connected with a vaginal portion, so that the uterus as a whole shall have its motions controlled within certain limits. Some are in the habit of employing a simple uterine stem, the objection to which is that it only keeps the uterine canal straight, and does not prevent the uterus from falling into a state of anteversion or retroversion.

3. The uterine canal must be previously sufficiently dilated to allow of the easy introduction of the stem.

4. The uterus must be in a non-irritated condition.

Cases of retroflexion are, as a rule, not suitable for the stem treatment.

There can be no question that the uterine stem can be quite safely employed by an expert fully alive to the nature of the accidents which may occur, and who properly selects the cases in which to employ it; and it is equally certain that the treatment is a great help in the cure of certain difficult cases. On the other hand, it must be admitted that, owing to the impossibility always of exercising the needful supervision, other methods of treatment will very frequently be preferred. When the uterus has attained to the condition of toleration of the stem, and it is well fitted, it may be worn without trouble of any kind often for months together. According to my own experience it is best borne in cases where the flexion is least severe; and this is to be remembered in considering the question as to the *general* applicability, or rather as to the general superiority of the stem method of treatment. Again, when there is great parietal atrophy as a consequence of the long-standing flexion, the stem treatment must be continued for a long time; even after it has been in operation for a year or so, on removal of the stem the flexion may be found to return almost as badly as before. In some such cases I have found vaginal or extra-uterine pessaries to be the only practical method of preventing the recurrence of the flexion. Various details as to the application of stems will be found in the chapters on Antelexion of the Uterus.

Use of Tents.—Tents are sometimes employed as a method of curing flexions of the uterus. They offer a means of dilating the uterine canal and temporarily abolish the flexion.

Tents have been used both for the purpose of procuring room for the insertion of a stem, and also for the purpose of straightening the canal.

Tents have a temporary effect only on the uterus. They might probably be used at intervals for the purpose of straightening the canal by repetitions of the process, but it does not appear that one operation is by itself of much service in the case of a chronic flexion, though it may be of the greatest assistance to the carrying out of other methods.

Tents require great care and caution in their use. Details respecting their employment will be given later on.

Incisions of the Uterine Canal.—For the cure of sterility, or for the cure of dysmenorrhœa, the operation of incision of the uterine canal has been largely employed. This operation is not so largely in favor now it is coming to be better understood that the supposed stricture of the cervical canal is in most cases due to the uterus being flexed. But it has also been practiced with the express object of facilitating the cure of flexion of the uterus, the latter condition being at the time recognized and duly appreciated.

The method adopted is to make longitudinal incisions to a considerable depth in the cervical canal, to fill the enlarged canal at first with a plug of lint, and afterward by a stem. This operation will be described more in detail later on.

Vaginal Pessaries.—Formerly vaginal pessaries were employed simply to prevent prolapse of the uterus. They are now also employed with great success in the treatment of uterine flexions.

It is a very great mistake to suppose that any pessary will suit any case. If employed with the view of curing or relieving a case of uterine flexion the vaginal pessary must be very carefully adjusted to the necessities of the case, or it will do more harm than good. Dr. T. Gaillard Thomas says on this subject: "A great deal of experience is necessary before any one can use them with certainty of accomplishing good results. A large and varied assortment is necessary, and sufficient mechanical ingenuity to mould and adapt to special requirements of cases."

The secret of success in adjustment of a vaginal pessary, in the treatment of uterine flexions is—(1) A right appreciation of the shape, size, and position of the vaginal canal. (2) The use of an instrument which shall not unduly dis-

tend the vaginal canal, but which shall exercise a constant controlling action on the movements of the *body of the uterus*. No better notion can be given of the kind of effect necessary to be produced than by pressing the fundus upward by means of the finger. Let us suppose the uterine body can be felt behind the cervix (in position of retroflexion). By pushing against this with the finger it can be made to ascend. Now this is the kind of action required to be effected by the vaginal pessary, and it has the advantage of being in constant operation. In the case of ante flexion the pressure is required in front of the cervix.

It generally happens that pressure is required either in front of or behind the cervix. This pressure must have a *point d'appui*, or basis, from which to start. This is the vaginal canal, in which the supporting agent must be placed. Some vaginal pessaries give pressure in a circular manner all round the uterus, and where the diagnosis is not very exact such pessaries are better, or at all events safer, than others more specially designed to give pressure in one determinate direction.

Vaginal pessaries giving distinct pressure (forward or backward, as the case may be) operate on the flexion—(1) By pushing up the fundus; and (2) By exercising traction on the cervix uteri. Thus in a case of retroflexion the Hodge-shaped pessary both pushes up the fundus and draws the cervix backward. It is a joint action, and sometimes the effect is not what is intended, because the traction on the cervix is too great and the uterus is turned on its transverse axis without being unbent. There are many details connected with this subject which will be found later on.

By a proper system of graduation in regard to size the effect of the vaginal pessary can be increased, if required, from time to time.

Vaginal pessaries with special pressure action require supervision; otherwise it may happen that the uterus gives way and becomes flexed in the opposite direction. This can only happen when the uterus is rather soft in texture. It thus follows that a vaginal pessary may work well for three months, but after that time it may require to be readjusted.

In flexions slight in degree and recent, a vaginal pessary alone is often the only treatment required. If chronic, a preliminary treatment is necessary, or (and this is a point to which attention is particularly directed) it will be neces-

sary to keep the patient in a state of great quietude, in the horizontal position, until the pressure of the support is well tolerated. It is a great mistake to apply a support giving considerable pressure and at the same time to allow the patient to go about as usual.

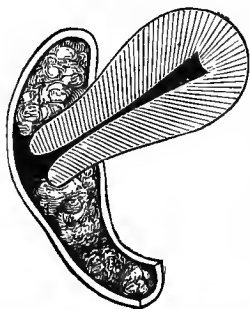
Postural treatment should be always used conjointly with the vaginal pessary in severe cases. In most of the difficult long-standing chronic cases no method has seemed to me better than conjoint treatment, consisting of—(1) postural treatment, (2) use of vaginal pessary, (3) use of uterine sound, or uterine dilator. This process of cure, though tedious, seems the most effectual.

A point worthy of attention is the necessity for aperient medicine or daily enemata in cases where vaginal pessaries are worn. It is frequently observed that the natural action of the bowels is a little interfered with, and medicine or enemata will then be required.

Another point is the necessity for use of vaginal injections in most cases where vaginal pessaries are worn; especially should such injections be used as the menstrual period is coming to an end. Half a pint of rather warm water mixed with a teaspoonful of Condyl's fluid is the best injection to employ.

As regards the *material* of which vaginal pessaries are constructed something has to be said. When the pessary

FIG. 50.*



has to be worn some time, and no further change of shape is required, ebonite is the best material. Copper wire covered with india-rubber is a good material because of its softness and pliability. Cleansing injections are, however, more often required. Metallic pessaries are sometimes very convenient. Block tin is a good material, though heavier than ebonite. Aluminium is an excellent material, owing to its lightness.

Vaginal tampons have been rather largely used by practitioners in America and elsewhere in the treatment of flexions. Thus Dr. Paul F. Mundé, of

* Fig. 50 shows (after Thomas) the position of the tampon in the vaginal canal.

New York, says: "The protracted wearing of astringent vaginal tampons introduced daily offers for some cases of ante- and retro-displacement an excellent and, for some cases of procidentia, almost the only efficient and safe remedy for the displacement—far superior to all steadily worn hard or soft pessaries."*

For my own part I have little experience of the use of tampons, but it is easy to see that they might be of great service, though the necessity for daily attendance on the patient which their employment involves is a very great drawback.

Electricity has been employed in Paris for the cure of uterine flexions, with some success, and it appears to me likely that it might be found of great service if perseveringly and skilfully employed. But it could not be expected to do very much in long-standing chronic cases, while in the more recent ones simpler methods of treatment are found successful.

General Summary.—A restoration of the firmness and natural resistance of the tissues of the uterus is required in the majority of cases where the affection is recent, and in many also where it is of long standing.

So long as the uterus is deficient in these qualities it is necessary to enforce a system of rest, or else to provide means—*e.g.*, internal appliances—for preventing the action of gravity from reproducing the flexion.

When the flexion is confirmed and the uterus hard, considerable time is required to be spent in straightening it, and prolonged assistance by means of internal appliances is required after the cure of the flexion, in order to prevent the action of gravity from reproducing it.

Dilatation of the uterine canal is frequently required in the latter class of cases. And in some cases incision of the cervix is required in order to facilitate the restoration of the proper shape.

Palliative Treatment.—In many cases it is necessary to institute treatment for the relief of the pain, irritation, and discomfort the patient is suffering from, irrespective of, or in addition to, the measures required for the cure of the affection. Thus, when there is acute congestion of the uterus the pain may be very great. In relieving this pain vaginal injections of hot water (temperature 100° to 110°)

* "On the Curability of Uterine Displacements," p. 24.

are of great service. Dr. Emmet strongly recommends frequent use of hot-water injections in cases where the uterus is in a state of irritation, and I have also observed very great benefit from their employment.

Opiates are most readily employed to relieve pain in form of suppository, or laudanum with water injected per rectum.

The congestion so frequently coupled with flexion is treated by some practitioners by leeches or scarifications of the os uteri. And there can be no question as to the utility of such local depletion in such cases. I confess, however, that in practice I find these measures very rarely required, for it is found that when steps are taken to relieve the embarrassed uterine circulation by elevating the fundus of the uterus, the congestion disappears. There are cases where this procedure cannot be at once effected, and in such it may be expedient to use leeches. But here comes the question, Are we to wait for subsidence of congestion before employing mechanical resources? The reply to this question is, that a well-adjusted pessary, together with observance of *complete* rest and a suitable postural treatment, will be found not only a possible, but a most efficacious method in all but a very few cases. It is only necessary to carry out this plan of procedure to become convinced of its propriety and suitability. In cases where the use of a pessary is postponed, the vaginal tampon would be found temporarily a suitable method of treatment.

Counter-irritation may be employed in a variety of ways, the plan selected being in accordance with the peculiar requirements of the case. A severe, sharp, acute pain is best met by application of a strong mustard poultice over the hypogastric region, or round the loins; this is to be repeated at intervals. Turpentine dropped on a piece of flannel wrung out of boiling water, and applied to the skin, is another counter-irritant, even quicker in its action than the mustard poultice.

Warmth.—Hot poultices of linseed-meal or bran are most valuable for the relief of pain in all kinds of inflammatory affections. They should be large, quite a third of an inch in thickness, and applied very hot. Several layers of flannel wrung out of boiling water, and rolled round the pelvis, offer a ready means of applying warmth. The warm hip-bath may be used for like purpose. Bottles of hot water, or hot bricks wrapped up in flannel, are household

remedies of every-day use. A warm decoction of poppies is often advantageously substituted for simply hot water for fomentations. The application of *cold* is not without its uses; but, as an anodyne, warmth is generally far more serviceable.

Anodynes.—The internal anodyne most ordinarily available is opium. The “*liquor opii sedativus*,” of Battley, is one of the best forms in which to use the medicine in question. Opium is often combined advantageously with some of the ethereal preparations. A draught containing “Battley” and the compound spirit of sulphuric ether is one of the best remedies for the relief of severe non-inflammatory pain referable to the uterus or ovaries which can be employed.

In chloroform we have an agent often of great service. Complete anæsthesia by means of inhalation of chloroform is not often required, except in cases where pain is very severe, or in order to facilitate operative manœuvres of various kinds. Taken internally, in the form of chloric ether, it is very useful as an adjunct to opium.

Belladonna, hyoscyamus, and conium are uncertain, and therefore very unsatisfactory, remedies, for the relief of pain, compared with those just mentioned. The Indian hemp is, however, better entitled to consideration, and in many cases undoubtedly exercises a marked influence in allaying or preventing pain. Camphor and Indian hemp combined I have often found of great service. Indian hemp is a medicine which, so far as my experience goes, appears to effect different individuals very unequally.

Camphor, alone or combined with opium, is of service when pain is spasmodic. The various remedies known as “antispasmodic” fulfil a like indication, and, as already observed, the ethereal preparations are most important for the relief of certain kinds of pain. The pain associated with uterine contractions, in cases of difficult menstruation, is best influenced by the use of antispasmodics. The compound tincture of lavender, chloric ether, and the compound spirit of sulphuric ether, may be often very usefully associated (twenty drops of each for a dose), opium being added or not, as may be judged necessary; this forms a combination adapted for all cases where there is pain of a spasmodic character, whether at the menstrual period or at other times; this “red” mixture is one which is very highly approved of by patients.

Local application of anodynes is often attended with good effect. The hypodermic application of one of the salts of morphia is the most potent of these. Chloroform dropped on a piece of lint, and applied over the uterine or ovarian regions, is a remedy now and then very useful for the relief of temporary pains in these regions. Tincture of aconite may be rubbed in with a like object. Suppositories or enemas, which are in a manner local remedies, offer frequently a ready means of relieving pain in the pelvic organs. Solid opium may be employed for this purpose, or the tincture of opium suspended in water-gruel, or mixed with tincture of valerian or assafoetida; the latter combination is particularly useful in hysterical cases. Opiates and sedative remedies may be also used locally, by making them up into the form of pessaries, which are inserted in the vagina.

CHAPTER XIX.

RETROFLEXION AND RETROVERSION OF THE UTERUS.

Severity of the Affection—Curability.

Frequency—In Hospital and Private Practice—Compared with Ante flexion—Single or Married.

Special Causes—Traumatic Influences—Dr. Squarey's Views—Influence of Bladder—Pregnancy—Straining Efforts in Defæcation.

Varieties—Basis for Classification. 1. Degree of the Flexion, first, second, third. 2. The Degree of Version (Rotation)—Substitution of Word "Rotation" for Version—Degrees, one, two and three. 3. Degree of Descent of Uterus as a Whole. 4. Degree of Resistance to Replacement and Unbending. 5. Degree of Congestion and Enlargement.

Progress.

Complications—Adhesions—Congestion—Not to be confounded with Rigidity—Prolapse of Ovary—Rupture of Perineum—Fibroid Tumor—Prolapsus of Rectum.

Symptoms—Pain, Dysmenorrhœa, Menorrhagia, Leucorrhœa, Amenorrhœa—Sterility—Abortions—Derangements of Bladder, of Rectum—Reflex Disturbances.

Diagnosis.

The backward displacements and flexions of the uterus—retroversion and retroflexion—constitute a class by themselves, and may be conveniently considered together.

Retroflexion of the uterus is one of the most painful and troublesome of the affections to which women are liable,

The affection is not always severe, it may be a very slight one—so much so as to give rise to no symptoms calling for particular attention; but it is not uncommon to see patients who have been for years tortured and incapacitated by it to an extreme degree, and reduced to a helpless condition of invalidism. The obscurity which has surrounded it has not even yet been completely dissipated, there being still some who deny the importance and seriousness of the affection; so strong is the effect of past teaching in perpetuating imperfect and erroneous views in this as well as in other departments of medicine.

Curability.—It is well known to those who have paid attention to the subject that retroflexion of the uterus is sometimes so troublesome and severe in character that it can only be cured by the greatest patience and care. Not only so, but cases are not rare in which the affection has been pronounced incurable. And more recently some such cases, considered otherwise incurable, have been submitted to the operation now known as Battley's operation, in order to relieve the patient of her sufferings.

According to my experience, however, the very worst cases are generally amenable to a judicious and patient course of treatment. When the disease has existed in a severe form for several years nothing can be done in the way of permanent rectification in less than a year or a year and a half; and in such cases, when the rectification is accomplished the uterus will require artificial assistance for a still longer time. I have succeeded in completely curing many very chronic cases, the success obtained being largely attributable, as I believe, to the great attention paid not only to the perfect maintenance of the uterus in its proper shape, but to the restoration of the general strength by adequate nutritional treatment. I have known cases where success has not resulted from mechanical treatment owing to neglect of the latter element in the treatment, and, under such circumstances, it is no wonder to me that they should be found "incurable."

Frequency.—The following figures convey the results of my own observations:

During four and a half years (1865–1869) at University College Hospital,* out of about 1200 cases prescribed for in the department for diseases of women, 112 were found to

* These cases were given in detail in the 3d edition of this work.

be affected with retroflexion and retroversion. [Cases of ante flexion or -version, 184.]

During a period of six years of private practice (April 1873-1879), out of 1140 cases, 180 were found to be affected with this distortion of the uterus. [During the same period 488 cases of anteversion and -flexion were recorded.] Thus 1140 private patients afforded 488 cases of ante flexion as against 180 retroflexion, and hospital practice afforded out of a total of 1200 patients, 184 cases of ante flexion compared with 112 of retroflexion. (For further remarks on this point see chapters on Ante flexion.)

Single or Married.—Retroflexion of the uterus is frequently observed in single women, though the greater number applying for relief are found to be married. Out of 180 retroflexion cases in private practice 41 patients were unmarried (22·7 per cent.).

The following Particulars refer to 180 Cases in Private Practice.

Age.	Unmarried.	Married: fertile.	Married: sterile.
18	2 cases	0	0
19	3 "	0	1
20	0 "	0	1
20-25	9 "	14	6
25-30	12 "	21	19
30-35	6 "	19	4
35-40	3 "	11	5
40-45	4 "	15	1
45-50	2 "	7	0
over 50	0 "	3	2
age not stated.	—	7	3
	41	97	42
Total.	180		

Special Causes of Retroflexion.—The general question as to the causes of uterine flexions has been already discussed (see p. 179). The remarks there made apply for the most part equally to cases of retroflexion and ante flexion.

Attention may, however, again be drawn to the great frequency with which what may be termed traumatic influences can be shown to give rise to this form of displacement. In a table given at p. 180, particulars of 44 cases of

retroflexion in *single* or *sterile* women are given. The table is to be read in this manner:

There were 41 single patients	} suffering from retroflexion:
42 married sterile patients	
97 married fertile patients	

$41 + 42 = 83$ cases in whom child-bearing had no part in the production of the malady (7 of them, however, had had abortions). Now out of these 83 cases it was found easy to trace a traumatic origin for the retroflexion in 44 instances. In the remainder a traumatic influence was not proved to exist, or at all events it was not detected. This is an exceedingly important fact as showing the frequent traumatic origin of the affection. And in other cases where no particular accident or special exertion could be traced a *mechanical* cause had evidently been in operation, acting more continuously and slowly, but gradually bringing about the change of shape and position.

It may be inquired, Are there any special mechanical causes for retroflexion?—that is to say, is any particular force more likely to produce a retroflexion rather than an ante flexion? In a very interesting paper by the late Dr. Squarey "On the Causation of Acquired Flexions of the Uterus,"* the attempt is made to explain why in some cases flexion backward occurs and in others flexion forward. Dr. Squarey suggests that it is due to the position of the uterus at the time of the blow or shock or fall which occasions the flexion, and that if the uterus be high in the pelvis it is more likely to be pushed forward, having a natural inclination in that direction when high in the pelvis; whereas, if it be low down in the pelvis, it has a natural inclination backward, and the force will have the effect of producing in the latter case retroflexion. There is much to be said in favor of this view. On looking at the list of causes given at page 180, where the results of observations and of inquiries in 340 cases are tabulated, it will be seen that various "traumatic" influences (as Dr. Meadows would term them) were shown to have produced in some cases one form of flexion, in others another. And particular accidents or exertions seem to have been tolerably impartial in regard to the effect produced. It must be recollected that the uterus in a state of health is well balanced, and a very trifling thing, the fulness or emptiness of the bladder, of the

* "Obst. Trans.," vol. xiv., 1873.

rectum—the position of the body at the moment—or other circumstances, may determine whether the fundus is to go backward or forward.

It has been shown (see p. 167) that the uterus has naturally a certain degree of what may be termed “play” forward and backward, in order to allow of due action to the neighboring viscera. The extent of this play is not, probably, in a state of health very great. The bladder is no doubt capable of producing a considerable exaggeration of the natural movement of the uterine fundus backward, and it is quite possible that the fulness or emptiness of the bladder at the moment when a particular accident or shock is sustained may be the reason why the fundus is driven violently downward and backward in a state of acute flexion, whereas if the bladder had been empty the result of the accident might have been quite different. It is a fact that undue distension of the bladder may actually produce retroflexion. In the etiological list (p. 180) mention is made of one case of this kind. In this instance, retention of urine during a railway journey produced retroflexion of a very marked character.

This effect of bladder distension in causing (or rather predisposing to) retroflexion must not be confounded with bladder distension the *effect* of retroflexion, for, as is well known, retroflexion of a large uterus may give rise to distension of the bladder and actual retention.

One important factor in the etiology of retroflexion appears to be the circumstance that when the uterus happens to be bent backward there is less power of self-rectification than when it is bent in the opposite direction. In the case of anteflexion the filling of the bladder may again lift the fundus upward, but in the case of the retroflected fundus there is nothing to lift it out of the Douglas pouch, or at all events to push it upward. The action of the distended rectum is not analogous to that of the distended bladder. The restorative influences in the case of retroflexion are only the natural erectile resiliency and elasticity of the uterus, and possibly in some degree the action of the round ligaments. There is also a possibility of a greater amount of flexion in the posterior than in the anterior direction, owing to the depth of the Douglas pouch behind the uterus. I should be inclined to think, judging from actual experience, that in cases where accidents have produced severe displacements the uterus must have had an inclination for-

ward or backward at the time, and that the result of this accident was a great exaggeration of the previously existing inclination.

There can be no question that traumatic influences are capable of producing severe retroflexion in individuals previously in a state of good health; but it is also certain that general malnutrition provides a predisposition of a powerful character, the practical effect of which is that a weakly patient will be more likely to be injured by a severe exertion or accident than one who is strong. Put in this way it is a truism.

Another important class of influences capable of producing retroflexion of the uterus is pregnancy and its effects. In some few cases retroflexion occurs for the first time soon after pregnancy has begun; this appears, however, to be a rather rare event. Many women become subjects of retroflexion after pregnancy is over who were not affected with it before. It does not appear, however, that pregnancy has any special effect in subsequently causing retroflexion rather than antelexion. A pregnancy is not necessarily followed by a flexion at all. It is not, I believe, so often followed by retroflexion as by antelexion. Still the fact remains that we meet with retroflexion in women who have borne children and in whom the retroflexion is indubitably connected with the previous occurrence of pregnancy.

Pregnancy leaves the uterus soft, large, heavy, and more liable to be acted on by the force of gravity. It sometimes leaves behind a special predisposition, viz., rupture of the perineum. I find that of 180 cases of retroflexion in private practice 97 were observed in married women who had had children. In these 97 cases traumatic influences were found to have produced the retroflexion in a considerable number of cases. The undue weight of the uterus, deficiency of the perineum—are two predispositions, and a walk, or strain, even the act of straining at stool, may under such circumstances produce suddenly the backward displacement. Protraction of the period of involution of the uterus, which means generally extreme weakness and malnutrition, is the precursor of retroflexion in many cases.

One very common cause of severe exaggeration of retroflexion is straining in the process of defæcation. It is probable that such straining is the primary cause in a considerable number of cases.

Is retroflexion of the uterus ever congenital? My own

FIG. 51.

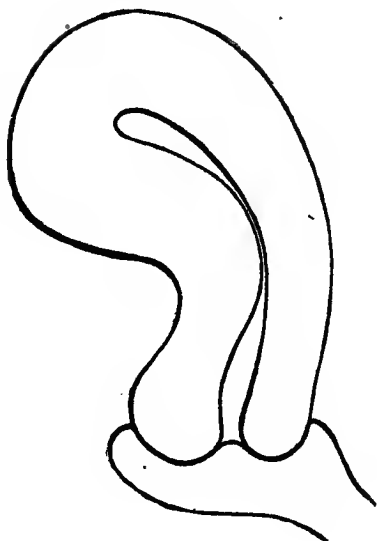
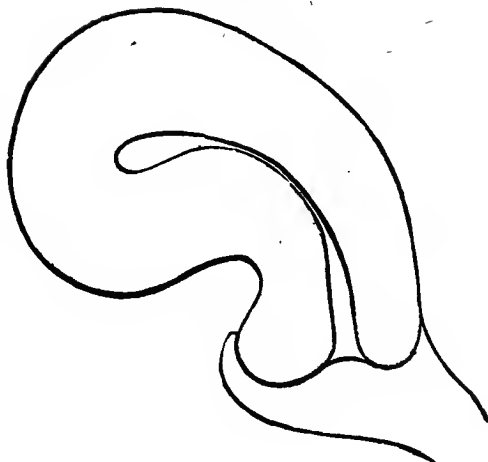


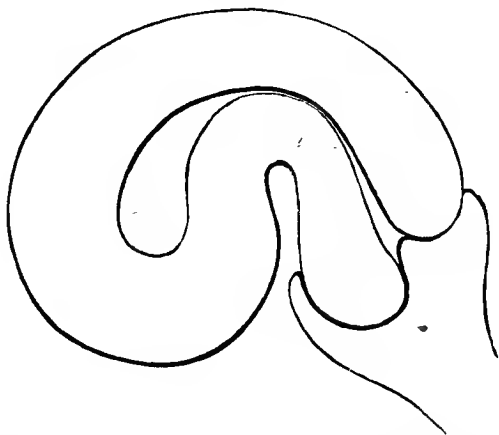
FIG. 52.



observations have not furnished me with a single case. Schroeder gives the opinion that it never occurs. Grenser, in an interesting paper on "Retroflexion,"* says, however, that Ruge in 1875 described a case of retroflexion in a newly-born child.

Varieties of Retroflexion.—Four principal conditions offer a basis for classification. One is the degree of the bend, another the amount of version (or rotation), a third the descent of the uterus as a whole, and fourth, the degree of resistance which is offered to the replacement of the uterus in its proper position and shape.

FIG. 53.



The Degree of the Flexion.—Flexion may be conveniently spoken of as existing in three degrees—the first degree when the axis of the body of the uterus has a relation to the axis of the cervix of about 45° ; the second degree when the angle is 90° ; and the third when the angle is between 90° and 135° or greater than 135° —the uterus in the latter case being doubled upon itself.

The accompanying figures represent the outline of the uterus in these three degrees of flexion.

Fig. 51 shows the first degree of retroflexion.

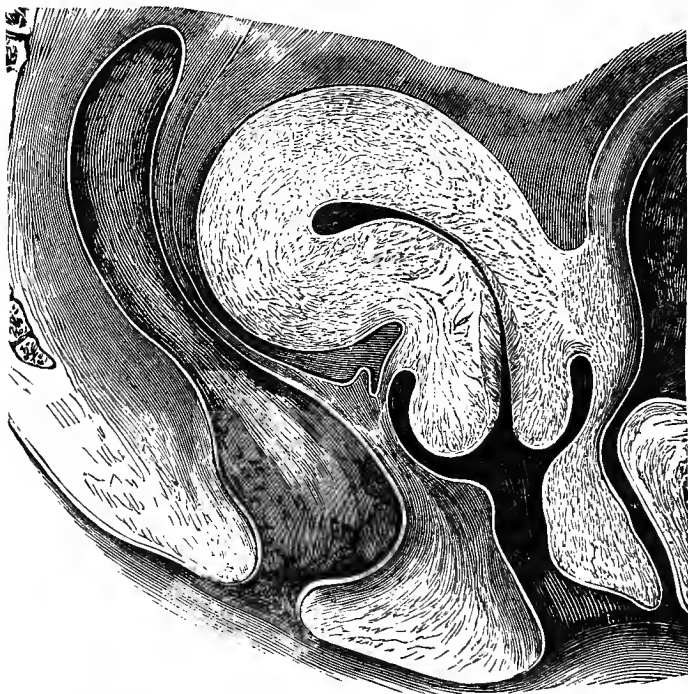
Fig. 52 shows the second.

* "Arch. f. Gynäk." ii. p. 145.

The body of the uterus is heavier, and its walls are shown to be thicker than normal. There is considerable congestion of all parts of the uterus, both fundus and cervix being larger than usual. The os uteri externum is widely open and the lining of the cervical canal partly everted.

Fig. 53 exhibits the third stage of retroflexion of the

FIG. 54.*



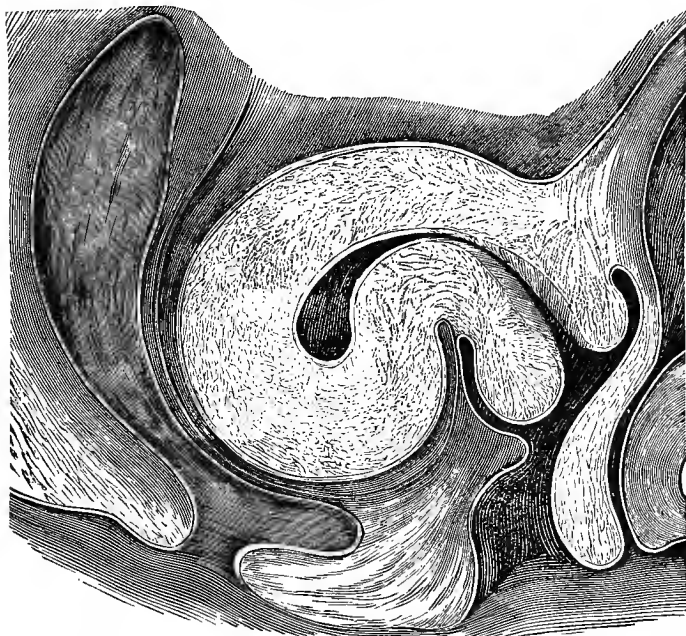
uterus with much contraction and compression of the canal at and near the internal os uteri. There is a very dependent position of the fundus uteri; there is also considerable distension of the cavity of the body of the uterus, much swelling of the lips of the os uteri, especially the posterior lip, and much eversion of the cervical canal at the os uteri.

* Fig. 54 shows the second stage of retroflexion, together with the second degree of rotation; the rectum and bladder are also shown.

There are other intermediate degrees of flexion possible, but for practical purposes this subdivision will be sufficient. It is not intended to imply that the angle formed is represented by straight lines; the uterine canal as a rule forms a curve, no part of it being a straight line.

The Degree of Version (Rotation).—If the uterus were perfectly rigid, and if its axis of suspension (a horizontal line

FIG. 55.*



drawn transversely across the pelvis at the centre of the uterus) were also fixed, the descent of the fundus backward would imply necessarily a corresponding elevation of the os uteri. The motion would be a see-saw motion—as the fundus descended the os uteri would be elevated—there would be true retroversion. But the uterus is not abso-

* Fig. 55 represents a third stage of retroflexion of the uterus, with third degree of posterior rotation; the pressure on the rectum and dragging on the urethra are also represented.

lutely rigid, and when the fundus descends backward it usually becomes bent above the axis of suspension, and below it also. The attachments of the cervix uteri prevent the elevation of the os, so the whole canal becomes flexed. The os uteri has different degrees of elevation in different cases. Three factors regulate this—(1) The general rigidity of the uterus; (2) The degree of fixation of the cervix uteri; (3) The mobility (which varies) of the axis of suspension of the uterus as a whole.

A true notion of what really happens to the uterus in cases of flexion cannot be conveyed by using the words "version" and "flexion" only, for there is another motion to be considered—viz., the *rotation* of the uterus on its axis of suspension when in a flexed condition.

Let us suppose the uterus to be flexed backward in the first degree and incapable of flexion beyond that degree. If an imaginary fixed rod be passed transversely through it at its middle, and pressure be made upon the fundus, the uterus will have a rotary motion imparted to it. The flexion will not be increased, but the fundus will descend lower while the os uteri will be elevated. It is possible to have this rotatory motion with any degree of flexion, and as a matter of fact the rotatory movement in question is one of the most important of the clinical features of retroflexion.

Rotation may, and generally does, increase the degree of the flexion, but it is not rare to meet with cases in which the uterus has become so hard in its flexed state, that although considerable rotatory motion often occurs, the degree of the flexion is not much increased thereby.

In view of the foregoing considerations it appears to me desirable to substitute the word "rotation" for "version" in speaking of retroflexions, more particularly as it will then be more easy to give a practical and clinical classification of cases.

There are three degrees of rotation.

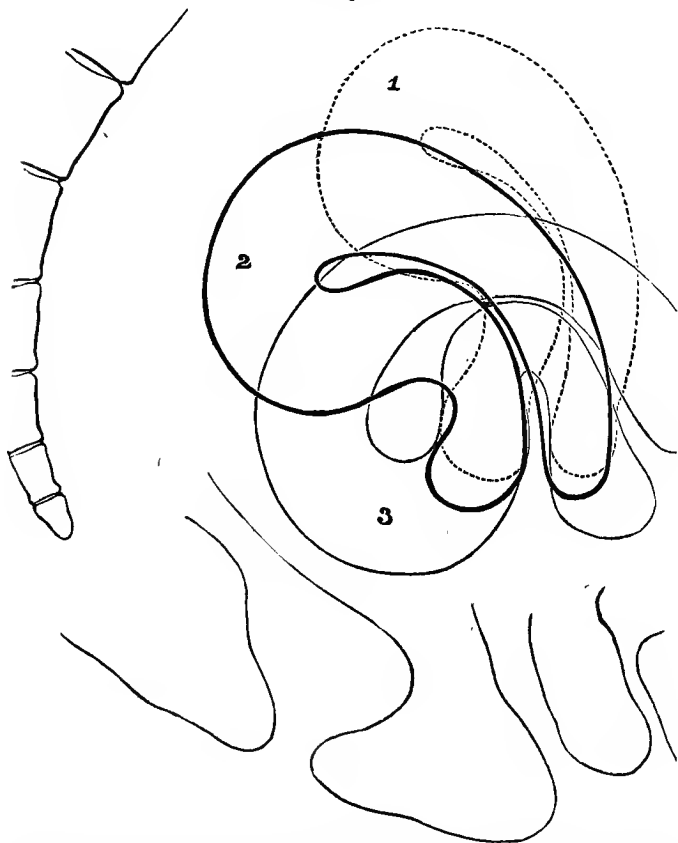
Thus, when the uterus is slightly turned backward on its central transverse suspensory axis, that will constitute the first degree of rotation; when the rotation is greater, the second degree; and when the rotation is extreme, the third degree.

Rotation may be great while flexion is very slight. Thus we may have rotation in third degree with flexion in first degree. Such a case as this would be what is usually

termed pure and simple retroversion of the uterus, and it is a condition very rarely met with.

On the other hand, rotation may be slight (first degree)

FIG. 56.



while flexion is great (third degree). But neither is this a very common combination. It is more common to meet with the conjunction of rotation in the second degree, and flexion in the second or third degree.

Increase of rotation has a tendency to increase the degree of flexion, and indirectly, also, *vice versa*.

In cases of retroflexion, the degree of rotation is ever liable to change. Exertions of various kinds increase the degree of rotation for the time being. The degree of flexion is generally increased at the same time, so that the *displacement* as well as the *distortion* of the uterus is conjointly intensified. When, however, the exertion is at an end, there is a more or less complete return to the previous condition. As, however, the return is hardly ever equal to the disturbance, the tendency is to a gradual intensification of both rotation and flexion.

The drawing (Fig. 56) shows three degrees of retroflexion—first, second, and third.

After what has been said, it is hardly necessary to point out that ascent of the fundus from a low position in the Douglas pouch does not necessarily imply a lessening of the flexion; it may mean simply reduction in the degree of rotation. The application of this remark to treatment is obvious.

The Degree of Descent of the Uterus as a Whole.—Mention has been made of the axis of suspension. This axis is not fixed, and it is sometimes so little fixed, that the uterus is allowed to fall very low—even to protrude from the vulva.

When the uterus is very low in the pelvis its shape is more readily made out, but the uterus may be much distorted without falling very low. As a rule, however, when the distortion is great, the uterus is low. In a very severe case we may have third degree of flexion, third degree of rotation, and descent of the uterus to the perineum, all conjoined. And in some instances the whole uterus so retroflexed escapes at the vulva (see Prolapsus).

Degree of Resistance to Replacement and Unbending.—Cases differ much in this respect. The unbending and replacement may be easy, difficult, or very difficult. The sound is used to determine the degree of difficulty.

When replacement is very easy, the uterus is usually abnormally soft. When difficult or very difficult, the flexion is usually of duration in proportion to the degree of difficulty. The resistance encountered arises, I believe, generally from the acquired rigidity of the uterus as a whole, and only very rarely from peritoneal adhesions. The uterus in chronic cases of retroflexion is almost always hypertrophied, and frequently becomes in time hard and resistant, so that it becomes more and more difficult to straighten it

as years go on. But this is by no means constantly the case; for I have met with very long-standing retroflexions in single patients in whom the uterus was found exceedingly soft and pliable. Extreme and long-continued malnutrition has always been a feature in such cases. The utero-sacral ligaments have, perhaps, been occasionally taken for adhesions. In some few cases the uterus is readily straightened owing to atrophy at the seat of the bend. Long duration of the malady does not therefore necessarily produce difficulty of restitution.

Degree of Congestion or Enlargement.—Retroflexion of the uterus is remarkable for the extreme degree of acute congestion which may be associated with it. The cases which used to be recorded as cases of acute inflammation of the uterus, were unquestionably most of them cases of severe retroflexion coupled with very acute congestion; and when the acute stage had passed away the uterus was left in a state of chronic irritability. Some of these latter were encountered by Gooch, and described by him as cases of "irritable uterus." Congestion may exist in all degrees in different cases. It is most severe when the flexion is greatest, and its access in great severity marks almost complete arrest of the circulation in the organ. The uterus swells, is acutely sensitive, and all motion is painful. In other cases it is less severe, and in a few it does not form a noted feature of the case. In cases where the flexion is only in the first degree, but where the rotation is not great—such as approach to version pure and simple—the congestion may not at any period be very intense. In some such cases the symptoms, being slight in degree, have given apparent foundation for the notion entertained by some that retroflexion is an affection of no clinical importance. One effect of persistent congestion is great enlargement of the uterus as a whole, and specially of the fundus. I have found the body of the uterus four or five times its natural size in cases of severe flexion, and if allowed to remain in its flexed condition the enlargement is persistent. The enlargement due to congestion of the retroflexed fundus is sometimes so great that there seems to be a large tumor behind the uterus, and I have more than once been misled by this, on making a first examination.

The congestion affects the os uteri also, rendering it swollen, tumid: and as it is engorged with blood, the mucous membrane of the partially everted cervix presents

a highly vascular appearance. Other important secondary changes occur (see Congestion of the Uterus, p. 110). Later on the uterus is less congested, but in a state of chronic induration, liable to attacks of congestion on slight provocation.

Progress.—It seems very possible that the first step in the production of retroflexion is often a slight exaggeration of the natural rotatory motion in the backward direction; next slight flexion; then increased rotation and increased flexion; and so on.

From time to time the flexion and rotation are increased, a daily oscillation at the same time occurring in degree. During the day it is increased, at night diminished. The affection remains a slight one, but usually tends to become severe. It may occur acutely, rapidly, even instantly, attaining a high degree of intensity (as from a sudden accident), or in the course of months may gradually become worse and worse.

Having become very severe, and the patient being quite laid up for some time with it, a certain degree of improvement may occur, the uterus acquires some tolerance of its distorted condition, and an incomplete recovery follows. Slowly there is a return to efficiency, but suddenly, after a few weeks or so, a slight exertion brings back all the symptoms with redoubled force, the flexion and rotation having become suddenly intensified. Again a rest; and again an illness.

In course of longer or shorter time tolerance may be established, the uterus has become harder, it bends less on motion, and a tolerable recovery is effected. It is not common to meet with this latter result where the flexion passes the second degree, or where the rotation exceeds the second degree. In the latter class of cases recovery of efficiency (by which is meant ordinary capability for the duties of life) is very rare, and chronic invalidism is the rule.

The above statements apply to the malady as observed in cases where no particular attempt has been made to remedy the retroflexion, and where the disease has taken its own course.

Marriage usually makes things worse for a time. Pregnancy may occur; more often, perhaps, does not. If pregnancy occurs abortion may, and most frequently does, follow. If abortion does not occur, a cure is for the time effected. The further history in such a case varies; either

the retroflexion recurs, becomes worse, and remains worse, or there is a succession of abortions, or a succession of pregnancies with occasional abortions, or a complete cure.

Complications.—Congestion of the uterus in a most intense form is almost a part and parcel of severe degrees of retroflexion. The congestion is the mechanical result of the flexion (see p. 112); it usually becomes increased in direct proportion to the degree of the flexion and rotation. It is most intense in cases where the flexion is in the third degree, but the rotation in the second. It is certainly less severe in proportion as the flexion approaches the first degree; and after some years it sometimes happens that congestion ceases to occur. Congestion is so common that it can hardly be considered as a "complication."

Presence of adhesions is a real complication. It appears to be rare, but certain cases of its occurrence are well authenticated. The fundus in such cases is bound down by peritoneal bands in its unnatural position. The elevation of the uterus by the sound, conjointly with the use of the finger in the rectum, is the best method of diagnosing them, for mere difficulty in raising the fundus does not prove presence of adhesions, as already stated (see p. 254).

In a paper by Dr. Erich are described "Seven Cases of Retroflexion with peritoneal adhesions of the fundus in the hollow of the sacrum, treated by forcible separation of the adhesions;" * but on reading the reports of these cases, evidence of a satisfactory nature as to actual adhesions is wanting. The reports give the notion that they were cases of rigidity of flexion, rather than cases of peritoneal adhesions. I have repeatedly found the same difficulty of repositing the uterus which Dr. Erich describes; but, except in a few cases, I have not had reason to suspect peritoneal adhesions. The fact is, that after a time the uterus often becomes very firmly set in its abnormal shape. Forcible action of the sound straightens it for the moment, but the flexion returns directly. This return of the flexion is certainly not a proof of adhesions.

The utero-sacral ligaments sometimes catch the fundus, as it were, between them in its retroflexed position (as Dr. John Williams has pointed out) and occasion an intensification of the congestion. It is evident that this kind of incarceration might give rise to a suspicion of adhesions.

* *Amer. Journ. Obst.*, Oct., 1880,

These bands would be felt tightly on each side, and, as a matter of fact, these utero-sacral ligaments vary much in distinctness in different individuals, and it is only in exceptional cases that they are very strong and well marked.

Prolapse of the ovary on one or both sides is a complication of a very troublesome character. It does not occur very often, but when the ovary falls down along with the fundus uteri into the Douglas pouch, and becomes adherent in that position—a condition sometimes met with—the case becomes a very difficult one to deal with in the ordinary manner. If the ovary be not adherent the complication is not so troublesome, and when the fundus is replaced and kept so, the ovary goes back into its place also.

Rupture of the perineum is a complication, grave or not according to the degree of the rupture. The retroflexion is sometimes entirely due to the deficiency of the perinæal support, and the one cannot be cured without remedying the other.

Fibroid tumor sometimes complicates retroflexion: a tumor growing at the back of the uterus tilts the uterus backward, and constitutes a very grave complication. The tumor occasions most trouble perhaps where it is not bigger than an orange.

Prolapsus of the rectum is sometimes due to the fundus being pushed down into the rectum, partially inverting it and forced partly out at the anal aperture during attempted defæcation. Here the fundus uteri acts as a complete ball-valve in the rectum, and seriously interferes with its due action.

SYMPTOMS.

A general account of the symptoms observed in cases of flexions has been already given (see p. 163). These symptoms are observed in an intense degree—some more, some less—in different cases of retroflexion.

Some of these symptoms present peculiarities in cases of retroflexion which require to be noted.

The degree of pain (spontaneous) is as a rule greater in retroflexion than in ante flexion, probably because the degree of flexion is greater in the former than in the latter. The pain is generally in the sacral region, but it may be a fixed pain on one side of the umbilicus, or even higher, or it may be in the groin. I have met with a few cases in which the pain has been so situated as to entirely attract

attention away from the uterus as the cause. I have known it to be so persistent in this situation as to have been diagnosed to indicate cancer of the pylorus. The pain on locomotion or movement (uterine dyskinesia) is often most intense. This symptom is one almost always very decidedly and painfully well-marked in retroflexion cases. Anything which gives the action of gravity an opportunity for still further rotating and bending the uterus—as standing, walking, stooping, even sitting—may give rise to extreme torture. This symptom may be absent, or not noticed, when the disease is of slow growth, but in the end it shows itself in a marked form. A not uncommon circumstance is to find that a patient is what is called “very weak.” This may turn out on inquiry to mean that she can walk but little; and investigation shows perhaps that she does not walk, because of the discomfort produced by it. This discomfort finally is discovered to be due to an unsuspected retroflexion.

The sensitiveness of the uterus to touch is in very severe cases most extravagantly great. These are the typical cases of what has been known as “Gooch’s irritable uterus,” the pathology of which has been explained at p. 212. Chronic severe cases of retroflexion are cases of this kind. This degree of sensitiveness is not so often found in ante-flexion cases, though it is sometimes met with. The sensitiveness is accompanied with congestion. The part most sensitive is the fundus; the os uteri is not generally so sensitive to the touch as the fundus. Any attempt to examine the uterus with the finger, unless done with the greatest care, causes the patient to shriek out; and it is at first rather surprising to find the uterus so sensitive when the amount of *spontaneous* pain felt may not be very great. There is, I believe, always in such cases considerable mechanical pressure on uterine nerves, due to the squeezing of the tissues of the organ. Dyspareunia is almost always well marked in severe cases of retroflexion.

Dysmenorrhœa is often severe, but as a rule not so common as in ante-flexion.

Leucorrhœa, appearing in the form of gushes, is not uncommon. A more or less copious puriform discharge is rather frequently observed.

Menorrhagia is common. Patients with retroflexion often lose largely at the periods, and there are losses often at intervals besides. Large clots often form in the dilated

uterine pouch, and are expelled with great pain and further loss of blood.

Amenorrhœa is the result in some few cases. Chronic retroflexion at first has a tendency to increase the quantity of menstrual fluid, but after a time in some few cases it may even bring it to a premature end. This latter result is due to the compression and hardening and contraction the retroflexed uterus in some cases finally undergoes. Its circulating apparatus becomes in fact less and less efficient, and menstruation ceases.

Sterility is a common symptom (see p. 219).

Abortions also are common (see p. 219).

The *disturbances of the functions of the bladder* due to retroflexion are various. In slight cases no disturbance may be noticed. In severe cases micturition is sometimes entirely impossible for a time, owing to the dragging upward of the meatus by the elevation of the cervix, or by the actual compression of the meatus against the pubic symphysis by the os uteri. Then we have retention of urine. Sometimes micturition is more frequent than usual.

The *rectum* lies close to the uterus and suffers frequently in cases of retroflexion. The commonest symptom is constipation, result of actual compression of the rectum by the fundus uteri. The more the patient strains the greater the difficulty, because flexion is increased. Defæcation becomes also extremely *painful*—it is positive torture in bad cases. The bowel is sometimes in such cases thought to be diseased when it is really quite sound. Hæmorrhoids are unquestionably rather commonly produced by retroflexion. A raw bleeding ulcerated surface is sometimes found produced by prolapsus of the bowel, result of the continuous straining efforts in the process of defæcation (see Complications, p. 221).

The *reflex nervous symptoms* due to retroflexion are numerous, and they are of the greatest importance. Severe nausea, severe hysterical symptoms, are the most marked of these, but these and other reflex symptoms are not peculiar to retroflexion, and are not therefore specially indicative of its presence. These symptoms are, on account of their great interest, reserved for consideration in a separate chapter.

DIAGNOSIS.

Diagnosis is generally easy, but in a few cases difficult. It is absolutely impossible to certainly diagnosticate retro-

flexion without a physical examination, many of the symptoms observed being liable to occur also in ante flexion cases.

The uterine fundus is readily felt from the vagina by the finger: also from the rectum. I have known cases where it has been overlooked, apparently from want of due care in placing the patient in a favorable position for examination. The lateral position, with the knees well drawn up, is required; this position allows the finger to pass higher than any other. When the flexion and rotation are only in first degree, the fundus might not be reached even then by the finger. When in second or third degree it could hardly be missed. The lower down the uterus is as a whole, the easier becomes the exploration.

The tumor felt behind has the shape of the fundus. But not always so: it may be much swollen. In some rare cases it is pyriform, from the fundus having been repeatedly and forcibly propelled down into the rectal aperture. It is generally sensitive to the touch. It is of course continuous with the uterine cervix. It can only certainly be diagnosed to be the uterine fundus—unless by an experienced observer—by using the uterine sound. Very gently and carefully the sound, only slightly curved, is passed, with the point directed backward, and if it passes to the full extent the diagnosis is established. In flexions of third degree, especially with rotation to second or third degrees, the sound must be more decidedly bent in order that it may enter. Further the diagnosis can be carried by gently turning the sound round after so introducing it, when the tumor generally can be made to disappear and can no longer be felt by the finger. On withdrawing the sound the fundus again descends unless the flexion be very recent.

The sound enables us to distinguish retroflexion from fibroid tumor growing at the back of the uterus—a condition which sometimes very closely simulates it; also from a small ovarian tumor which might be felt in the same position (very rare); also from tumor produced by hæmatocele, and from tumor due to pelvic cellulitis; though the two latter conditions could hardly be confounded with retroflexion (of the non-gravid uterus at all events); also from carcinomatous infiltration between the uterus and the rectum.

The shape of the os is peculiar (as a rule) in retroflexion. It is crescentic, the posterior lip is longest; and it is everted,

and often very much swollen. In the nulliparous uterus this characteristic shape of the os is not usually observed.

The position of the cervix is abnormal. It is more or less tilted upward; sometimes it is quite high up behind the symphysis and very close to the pubic bones. The vaginal pouch behind the cervix is lost, owing to the fundus pressing it downward and obliterating it. And there is an unnatural pouch up behind the symphysis pubis *in front of* the cervix. Moreover, by the double touch the fundus is found absent from its normal position.

CHAPTER XX.

RETROFLEXION AND RETROVERSION OF THE UTERUS—

(*Continued*).

TREATMENT.—General—Local—Plan recommended—Outline and Details—Postural Treatment—Mechanical Direct Reposition—Maintenance of Proper Position by Vaginal Pessary—Form of Pessary recommended—Various Sizes required.

Position of Patient—Use of the Sound—Conjoint use of Sound and Pessary—Difficulties encountered in Treatment of Cases—Adjustment of Size of Pessary—How far Vaginal Pessaries are reliable—Action of the A. Smith Modification of Hodge Pessary—Necessity for Rest, and gradual Elevation of Fundus in some Cases—Occasional Over-action of the Retroflexion Pessary—How long to be continued—Method of Introduction—Change of Pessary—Various Modifications of Retroflexion Pessary—Dilatation and Moulding for Cure of Retroflexion—Stem Pessary—Incision and Immediate Rectification—Radical Operation (Koeberlé)—Oöphorectomy.

TREATMENT.

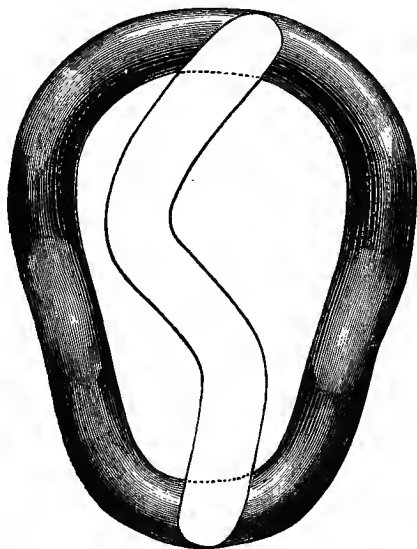
The general principles of treatment of flexions laid down at p. 224 apply and should be applied to the treatment of this particular variety—retroflexion. It is most important at the outset of the treatment that the view taken of the case be as complete as possible, and that the *general* and the *local* receive each their proper and due share of attention.

Premising that this has been done, we proceed to consider the various details of the treatment of retroflexion.

The Local Treatment.—There are various plans adopted for the treatment of cases of retroflexion. The plan which I have found satisfactory in the large majority of cases I propose to mention first. It may be described as follows:

The fundus uteri is pushed upward from behind, rapidly or slowly according to circumstances, by means of a pessary constructed on the Hodge principle; the pessary is kept *in situ* persistently and the size altered as circumstances require. The sound is employed from time to time to aid in the elevation if it be at all difficult. The patient is kept more or less completely at rest until the uterus is well in its place, and suitably maintained there. Every advantage is taken of the assistance of gravity in righting the fundus, by the prone position, by the knee-and-elbow position, by

FIG. 57.*



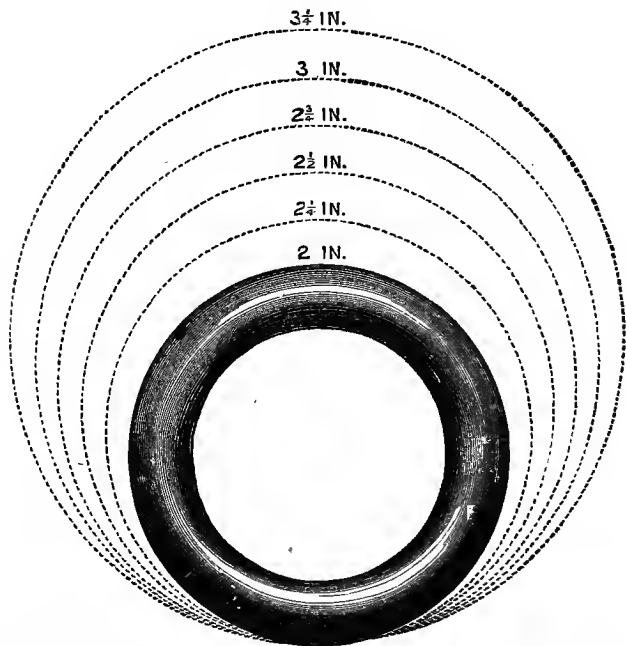
avoidance of the recumbent-dorsal position, by avoidance of the sitting posture, etc. The bowels are kept in order by daily injections, or otherwise. Pain is relieved by opiates or by vaginal injections of hot water. Careful general appropriate treatment.

The above is an outline. The details require further specification.

* Fig. 57 represents a medium-sized pessary of this kind. The ground plan and the sectional lateral view are given together.

Direct Mechanical Reposition.—Regarding the condition as entirely a mechanical one, the resort to mechanical treatment is only natural. There is no necessity to be afraid of restoring an acutely congested retroflexion, or of beginning the attempt at all events, simply because the uterus is acutely sensitive and in a state of intense congestion. Nor is there any necessity for depleting the uterus by leeches

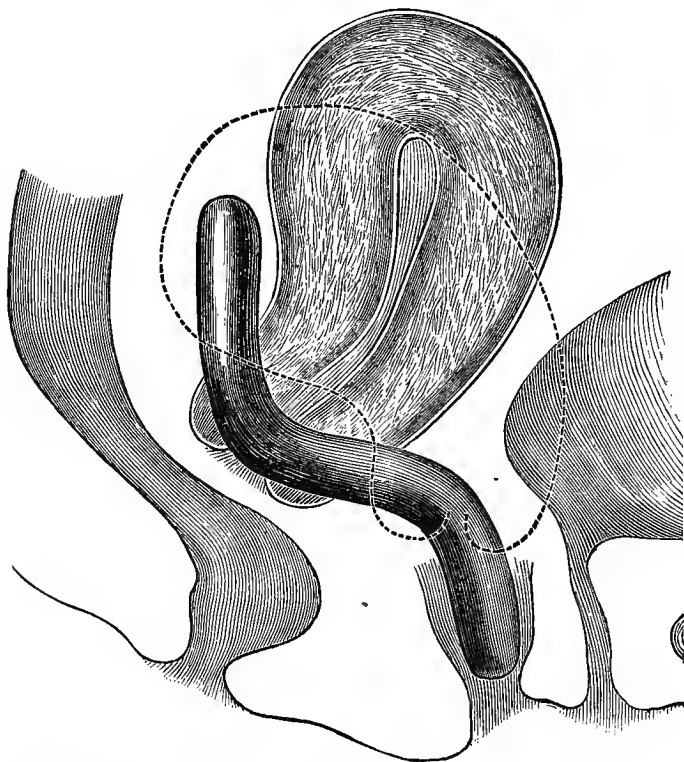
FIG. 58.



before commencing the mechanical restoration, seeing that this restoration will pretty certainly remove the congestion (see p. 137) as I have observed over and over again in practice. The uterine fundus may, if very sensitive, be gently pushed upward by the fingers at first, the postural treatment following it; or it may often be replaced wholly or in part by the sound at once if the practitioner is gentle and skilful in its use. A day or two of postural treatment is a good preparation for the above measures. Surprising re-

lief often follows the elevation of the fundus in the acutely suffering cases. The pessary may be often used at once, pressure being made slight at first and gradually increased. It is absolutely necessary at first to maintain the recumbent

FIG. 59.*



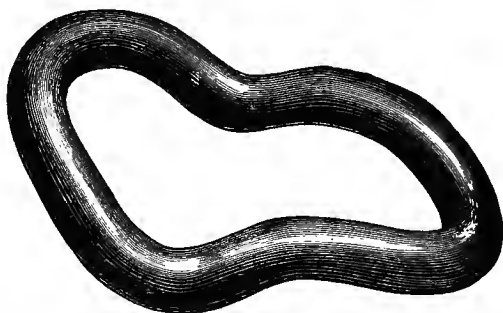
position if a pessary be employed and the case at all a difficult one, or one of long standing. The pessary I have for some time employed is a vaginal pessary on the Hodge principle. I have for the last three or four years, in the

* Fig. 59 shows the action of the pessary described in the text. The dotted line represents the position of the uterus prior to the insertion of the pessary.

majority of cases at least, used a shape nearly identical with that known as the "Albert Smith" shape—broad above and narrow below.

From a copper ring covered with india-rubber an admirable instrument can be made. The type of the instrument is that shown in Figs. 57 and 60. It requires various modifications in different cases. Therefore, various-sized rings are required. A series of rings ranging in outside diameter from two inches to about three and a quarter inches are required (see Fig. 58): the first measuring two inches, the second two and a quarter, the third two and a half, the fourth two and three quarters, and so on up to three and a quarter inches. The thickness here shown is five sixteenths

FIG. 60.*



of an inch; other degrees of thickness are required or may be used at the discretion of the practitioner. The copper wire used should be rather stout for the large-sized rings—rather thicker than for the smaller ones.

The thickness of the ring when covered with india-rubber may with advantage be a quarter of an inch for the very small rings (instead of that shown in the figure, which is five sixteenths), but about five sixteenths is a good thickness for the sizes ordinarily required. For larger sizes the thickness may be increased to six sixteenths with advantage.

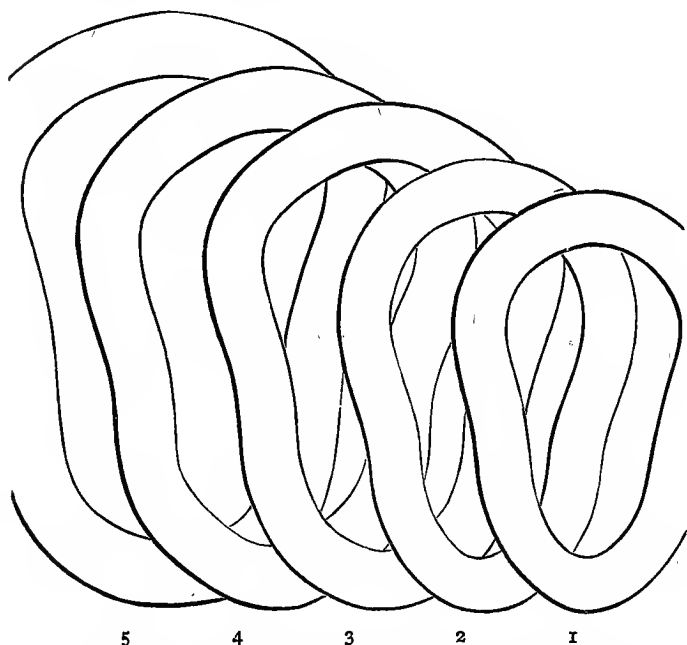
The accompanying drawing (Fig. 59) shows the retroflexion pessary of the A. Smith type *in situ*; the drawing is life-size, the pessary shown *in situ* is constructed from a

* Fig. 60 shows an oblique view of a medium-sized A. Smith type Hodge pessary.

ring two and three quarters inches in diameter. The upper curve of the instrument may be modified. The curve I generally employ is less sharp than that depicted in some American works, but this is liable to modification according to the particular case.

In the last edition of this work are represented figures of an oval-shaped pessary rather larger at one end than the

FIG. 61.

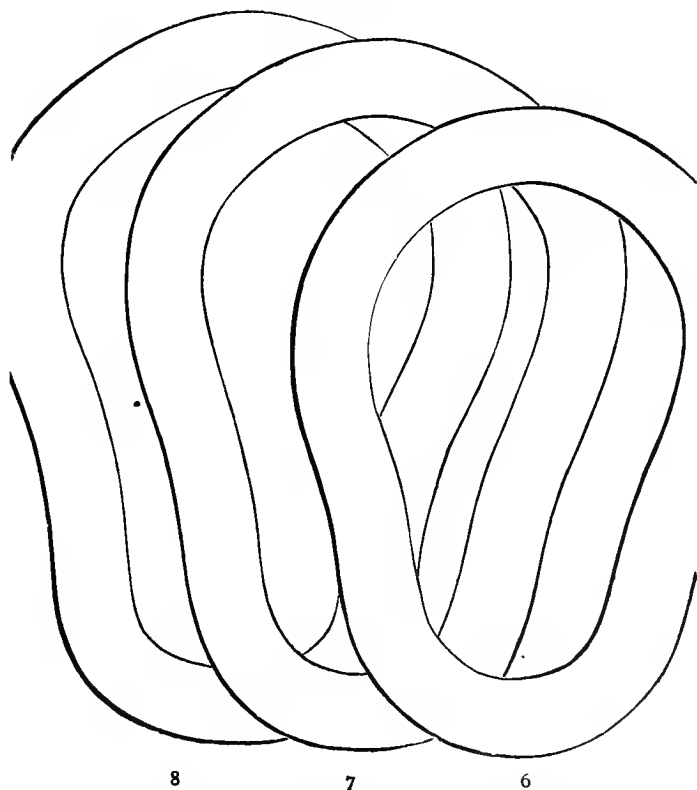


other, the smaller end being behind the cervix uteri. But I have found the shape originally introduced by Dr. A. Smith to work so satisfactorily that I prefer it to all others. His modification of the Hodge pessary for retroflexion is broad above, narrow below; it has a rather sharply double bent outline looked at from the side, and it is this outline which preserves it from slipping downward. Roughly speaking, the instrument is a triangle: the base above behind the cervix supports the fundus, the apex below should

be so curved that it lies on the vaginal floor, and does not press on the urethra.

In considering the Albert Smith type of the Hodge pessary as the best, I am in agreement with several distinguished gynæcologists, both American and European.

FIG. 62.



Various sizes are required to be used in different cases. In Figs. 61 and 62 are represented *eight* different sizes. The extremely small and extremely large sizes are rarely required. In single women a narrower pessary is required than in other cases. The size will generally require to be altered as the cure advances, and as the fundus rises up

to near its proper position, for if the case is a chronic one it is quite certain that only a small-sized pessary will be borne at first; the pessaries constructed from rings of two and three quarters to three or three and a quarter inches in diameter are most often required for married patients. The very large sizes, marked 6, 7, 8, in Fig. 62 are rarely required, but they are sometimes necessary when the uterus is exceptionally hypertrophied as well as retroflexed. When the swelling of the uterus has gone down, as it may do after a few weeks, a smaller pessary can be employed.

Position of the Patient.—The patient should lie not upon the back, but upon the side, or, still better, upon the face. This is effected by making a kind of inclined plane with pillows placed under the chest and abdomen, one arm being placed quite behind the patient's back. By a little management a very comfortable position is thus attained. The result is, that the weight of the fundus uteri is in a great degree thrown forward instead of backward, and great assistance in the mechanical treatment is thus afforded. In severe cases this position of the body is in fact absolutely necessary, and I have seen patients who before had been in a state of absolute torture while lying flat on the back restored to comparative comfort by the simple procedure of enforcing the position on the face. The length of time during which it is necessary to maintain this position of the body depends upon the acuteness of the case. But when there is much irritation about the uterus it is absolutely necessary for the patient to remain in this position for some weeks. The upright position is destructive of progress in the right direction. The knee-and-breast position should be used several times a day for three or four minutes at a time. All exertion must be absolutely interdicted for a time, varying according to circumstances. In this manner we carry out as far as possible what may be termed the treatment of *rest*, a most important element in the treatment of these cases.

The Use of the Sound.—The method which I recommend in the treatment of a recent case of retroflexion is that the sound, very slightly curved indeed, should be introduced gently and gradually into the uterus, and then gently turned round, so that the concavity looks forward, and the uterus thus restored to its proper shape; that the sound should be used once in two or three days, perhaps at intervals of a week; and that this treatment should be com-

bined with the continuous use of the vaginal pessary. In a recent case, the use of the sound is generally unnecessary for more than a limited time, perhaps for a week or two. In a chronic case, where disease has existed perhaps for some years, the use of the sound is necessary at intervals of a few days, employed with great care, extending over a period of possibly two or three months, and we may be obliged to intermit the use of it occasionally. Some cases do not tolerate the repeated use of the sound, owing to occurrence of irritative symptoms; and these are more likely to occur if the vaginal pessary is at the same time continued to be worn. When the sound is used for altering the shape of the uterus it should be bent very slightly; indeed it should be very nearly straight. The difficulty of introducing the sound is got over by pushing up the fundus uteri by the finger at the same time that the sound is gently passed inward with the concavity backward. Even in cases where the flexion is very acute the bend of the sound need not be great if the procedure be simultaneously adopted of pushing up the fundus. The use of the sound alone is rarely attended with any permanent benefit. The uterus almost invariably returns to a flexed condition a few moments after the sound is withdrawn. The rapidity with which the flexion returns on withdrawal of the sound is a useful indication as to the difficulty or not of the cure. The sound should always be used gently and held lightly. Force must not be employed, for the process of unbending the uterus in a chronic case is necessarily a long one, and involves considerable change and stretching of the tissues. It is very advantageous in many cases to hold the uterus in its proper shape by means of the sound for half an hour or an hour at a time.

Difficulties in Regard to Treatment.—There is a very striking difference in regard to curability under different circumstances. A case of retroflexion which has only existed for two or three months, and which is not very acute in regard to the degree of flexion, may be cured in a few weeks. If the flexion has existed for two or three years it may be expected that the treatment will not be completely successful under, perhaps, six or eight months. And in cases where the malady has existed for nine or ten years the treatment may not be successful even in a much longer time, in removing absolutely all effects of the disease. The changes in the texture of the uterus itself are sometimes so great

that it is difficult to restore the organ to its natural size and position, and its walls to their natural thickness. And I have known cases in which the long continuance of the compression process on the tissues in the posterior wall of the uterus has left behind it a neuralgia of troublesome character, even after the shape of the uterus had been restored. This is what might be expected, and it is analogous to those cases where inflammatory processes, resulting in compression of nerve trunks in other parts of the body, leave behind them a persistent and intractable neuralgia.

The first difficulty is the selection of the method of treatment appropriate to the case. And it is not easy to lay down precise rules on the subject. Some generalizations may, however, be offered as an attempt to smooth the way for those who have not had much experience in the matter.

The resistance offered to straightening the uterus is of great value as an indication. If the directions previously given be attended to, and the sound lightly and carefully used, the necessary information can be obtained. If there is any resistance to straightening, or if the uterus returns to a state of flexion immediately on withdrawal of the sound, it is certain that treatment by a vaginal pessary *alone* will not be likely to succeed, and repeated use of sound (or other like methods) will be also required. A well-fitted vaginal pessary will do much; but if the uterus be set and firm in its flexed condition, the only effect of its use will be to prevent increase of rotation of the uterus, but the flexion may remain unaffected. And in such cases the patient remains imperfectly relieved, or if relieved, it is found, on taking out the pessary later on, that the flexion is as bad as ever. On the other hand, if the uterus be soft and pliable, easily replaced and remaining replaced after withdrawal of sound for two or three minutes, it may be assumed that the case may be safely treated by vaginal pessaries and postural treatment or without necessity for repeated straightening.

Then it may be asked, Cannot some cases be treated without a vaginal pessary at all, and by postural treatment alone? No doubt if we saw the case in its earliest inception the thing might be done; but I have, myself, never seen a case at a sufficiently early stage to allow of this. On the other hand, I have known of retroflexion cases which have been treated by posture (lying on a prone couch at all

events) for a year, or upward, and which have not been cured thereby.

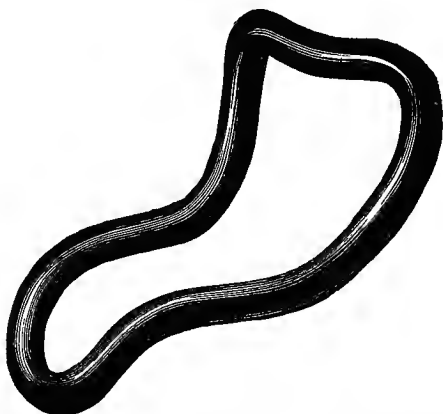
The adjustment of vaginal pessaries is a matter of no little difficulty. I do not mean the actual operation or insertion, but the selection of the instrument to be used.

This seems the place for the discussion of the question as to the efficacy of vaginal pessaries in treatment of retroflexion. I have had the greatest success with them, and have cured many very severe cases by their aid, assisted, as above described, by use of the sound. Their action requires to be carefully watched and adjusted until the uterus is secured in a good shape and position, after which they give little trouble. The upper extremity of the pessary must carry the fundus up to its proper place. In order to do this it must be sufficiently long. The vaginal pouch behind the cervix is of course pushed up in accomplishing this, and I have hardly ever met with a case where a sufficiently long pessary could not be inserted. The process often requires a little patience, and the pessary requires to be exchanged for a longer one from time to time until the object is attained. The pessary must be carefully examined when *in situ* to ascertain if the work required is actually done, for sometimes it will be found that the pessary is simply imbedded in the concavity of the flexion, and is doing not only no good, but actual harm. One practical direction may here be given. Sufficient care is often not given to the method of making the digital examination. If the patient be properly placed with the knees well drawn up, the finger can be made to reach nearly an inch higher in the vagina than would otherwise be the case, and thus the displaced fundus can be felt more readily. This is important in testing the action of the pessary. The sound can of course be used to test the position of the fundus; this requires to be done carefully, and the sound should be used nearly straight. In some cases it is found that the pessary requires to be carried so high up behind the uterus that it is difficult to reach the upper end with the point of the finger. It is impossible to do more than give the possible range of length and size of instruments, for each case has a law for itself as regards size and shape.

The pessary which I have above mentioned (the Albert Smith variety of the Hodge pessary) is very successful in getting over a difficulty I had frequently experienced before employing it. Retroflexion of the uterus is rarely exactly

median, the fundus having generally an inclination to one side. Hence, the fundus is found often to slip to one side of the ordinary-shaped instrument. But when the instrument is made wide above, as in the Albert Smith pessary, this slipping of the fundus is prevented. Sometimes the width required to prevent such lateral deviation is considerable. It is difficult to introduce a wide instrument when the vaginal entrance is narrow, but in women who have borne children it is quite practicable. It is sometimes advisable to give the upper limb a slight extra projection to one side or the other.

FIG. 63.



A valuable modification of the retroflexion pessary is described by Dr. Gehrung,* consisting in giving the upper part of the pessary a central depression, so as to prevent the fundus slipping to one side of the pessary. The same idea is carried out in Dr. Gervis' pessary. Gehrung's pessary is shown in the accompanying figure (Fig. 63) and is peculiarly useful in cases where the uterus is really retroflexed a little to one side. The principle of this modification is excellent, and I have repeatedly employed it.

The pessary above recommended has a double action: it draws the cervix backward and thus reduces the rotation, and it appears to be considered by some writers that the

* *St. Louis Med. and Surg. Jour.*, August, 1878.

action of the Hodge pessary is limited to this. But it is not so, and I know from practical experience that by the direct pressure and lifting action of the upper limb of the pessary the fundus can be carried to the necessary height, though to accomplish this a rather long pessary may be needed.

In some cases where the uterus is very large, a pessary of considerable size is needed (see p. 269), and unless one of sufficient size be used the uterus cannot be kept in place.

FIG. 64.



Other Modifications of the Retroflexion Pessary.—There is no doubt that in some cases it is an advantage to have the upper part of the pessary of considerable thickness, as the pressure is better borne, and it acts mechanically better; say, the size of the little finger (about half an inch). An expedient which has been frequently had recourse to in cases where the pressure of the instrument against the fundus is badly borne, is to cover the upper end with a cushion

containing water or air. Dr. Priestley's pessary (which is a stem acting from without) is arranged in this manner. I have occasionally had pessaries on the Hodge principle covered with such a cushion at the upper end. In Dr. Greenhalgh's pessary (see Fig. 64, representing a medium-sized instrument) a similar object is effected by an air-pad, or by use of the soft elastic material known as moc-main covered with india-rubber.

In a really troublesome case it would be best to have an instrument so padded, which would admit of being moulded into the exact shape required.

Practically I find that, generally, direct pressure on the fundus can be prevented; and when it cannot, by proper positional treatment and other adjuvants, the necessity for a padded pessary can be often avoided, even when the fundus is very tender to the touch.

Cutter's pessary for retroflexion is one well worthy of trial in cases where continuous pressure cannot be borne. It is an ebonite pessary, shaped something like the upper part of a Hodge pessary, which in Dr. Thomas's modification of it is made rather thick; but the lower part is prolonged, in a sigmoid shape, and projects at the vulva. At this latter point it is curved a little back over the perineum, and a tape is thereto affixed, curved upward over the sacrum, and tied to a circular waist-belt. The pressure made on the fundus is thus capable of regulation from the outside. The advantages and the disadvantages of this treatment are obvious enough. I have seen cases where the instrument would have been applicable with advantage, but personally I prefer other methods of treatment. In Fig. 65 is shown Dr. Thomas's modification of the instrument.

FIG. 65.



General Remarks on the Employment of the Retroflexion Pessary.—It is sometimes the case that the pessary, though well fitted, can be tolerated for not more than a few hours. The uterus will not always bear to be carried at once to its proper position. Two courses are open: to lessen the pressure by using a smaller pessary, or to rigidly enforce the prone position; and both these courses may have to be taken at the same time. The pessary should be made to act as little by direct pressure on the fundus as may be,

and the use of the sound takes it away from the pessary. The prone position and the knee-and-elbow position have the same result in a more or less complete degree according to circumstances. For these reasons if the uterus be tender to the touch, a pessary should not be employed unless care be taken by rest and suitable position to lessen as much as possible the direct pressure of the pessary on the fundus; and this is a great part of the secret of success in difficult cases.

It does not at all follow because the pessary does well for a considerable time that it will do so indefinitely. In fact, there comes a period in some cases when, the condition of retroflexion having been cured, the uterus is rotated *forward* by the action of the pessary, and the retroflexion is changed to an anteversion or flexion. I have seen cases where much disappointment had been experienced in consequence of an apparent recurrence of symptoms, and where, on examination, this result was found to have occurred. It is more likely to happen in cases where the uterus is rather soft than under other circumstances. There are a few cases where the uterus is very soft, and where the change from retroflexion to anteversion occurs almost *at once* on application of a retroflexion pessary; but they are very rare.

It is difficult in some cases to say when the pessary can be safely left off. This involves the question as to the complete curability of retroflexion of the uterus. When pregnancy occurs, the pessary can be removed at four months, after which time there is little danger of recurrence. After pregnancy is over, the pessary will probably be again required (in about three weeks), if the distortion is of long standing. On the whole, it may be said that if the retroflexion has existed for two years it will probably be necessary to employ the pessary for nearly an equal time. And, speaking generally, it would seem that the duration of the disease regulates pretty directly the duration of the mechanical assistance the uterus requires. There are cases which are more speedily cured, but they are exceptional. Pregnancy certainly aids in the cure, but does not absolutely effect it. After long years' duration, a complete cure is almost impossible; though, by the expenditure of much time and patience, the uterus may ultimately be made to assume a correct form, even after six,

eight, or ten years; but in such cases the very prolonged use of a vaginal pessary will be required.

It must be understood that the pessary above recommended has no fixed bearing against any part of the bony framework of the pelvis. Any pessary pressing against the pubic bones is badly adjusted, and will be likely to be mischievous. The pessary must be so fitted that it is embraced and kept in place by the vaginal canal itself, which embraces it and surrounds it. Ordinarily it is not necessary to have a broad base for the instrument, for the sigmoid curve which it possesses seems admirably to insure its retention in the vaginal canal. The lower extremity of the pessary should therefore be just within the vulva at the centre of the aperture, and should not press against the rami of the pubes.

Introduction of the Retroflexion Pessary.—The patient must be well placed on the side, with the knees drawn high up. The instrument should be well covered at one end with cold cream or fresh lard. It should be held a little obliquely at the vaginal aperture, as it then passes in more readily. It is then gently inserted about half way into the canal. When arrived at this point the finger should be passed in behind it, and the upper extremity pushed sharply backward behind the cervix. It then shoots rapidly into its proper position. It almost invariably happens that the instrument passes in *front* of the cervix uteri instead of behind it if these precautions be not attended to, and it is hardly necessary to state that in such a position the instrument will do considerably more harm than good. After it is in its place it may be pressed firmly to make sure its pressure can be borne; and it is a good plan to make the patient cough or to strain downward in order to test the question as to whether the pessary is so well adjusted that it will not escape. It is sometimes difficult to insert a pessary owing to tenderness or spasmodic resistance of the patient, without anæsthetic aid.

When the entrance of the vagina is narrow care is requisite to avoid bending the pessary, if made of copper and india-rubber, in the process of introducing it. A solid ebonite pessary is in such a case better, unless the operator is well skilled. It may be well to mention that the pessary is worse than useless if it be inserted with the concavity downward instead of upward. No one who has not studied

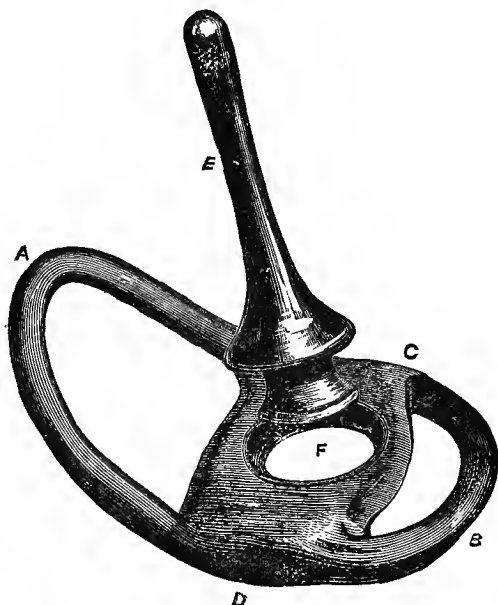
the construction and objects of the instrument should attempt to insert it.

Necessity for changing the Pessary.—A well-fitted pessary should require to be changed very rarely. The object of the pessary is to maintain the fundus in its proper place, and if it be taken away for purposes of cleanliness it should be again at once inserted, otherwise ground gained is unnecessarily lost. The pessary should be considered in the light of a splint, the action of which should be continuous. On no account should it be removed at the catamenial period. If well-fitted its presence will at that time be very necessary and useful. If it is thought serviceable to remove the pessary for a few days the patient should not be allowed to move out of the horizontal position. For purposes of cleanliness it is sometimes desirable to employ daily injections of warm water with a little disinfecting fluid when the pessary is constructed of india-rubber; but when of ebonite, injections are generally only required just after the monthly period is over. Change of the instrument is of course required if it does not fit, or when circumstances require an instrument of a different size. In practice I have found that patients go on comfortably wearing the same instrument sometimes for years together. While writing this I receive a letter from a patient whom I have not seen or heard of for three years, and who writes to say that she has been perfectly well all the time, and wishes to know what to do, as pregnancy has now occurred. It should be the rule to take note of the condition of things at stated intervals; not more than a year certainly should elapse without proper examination and removal of the pessary; though in my experience I have not met with any inconvenience resulting from uninspected long protraction of the use of vaginal pessaries.

The Simple Ring Pessary for the Treatment of Retroflexion.—Some years ago Dr. Meigs introduced the "ring" pessary for treatment of retroflexion, and it has been largely employed for the purpose. The basis is a piece of watch-spring. The instrument, as now a good deal employed by Dr. John Williams and others, is made in various sizes and covered thickly with india-rubber. This pessary admits of easy introduction. Its merits are that it is readily introduced, that it acts fairly well, and is borne with less difficulty, owing to its elasticity, than a more rigid instrument. Its defects are, that it is incapable of carrying the fundus

up beyond a certain limited distance, and that the ring must be a large one to do very much in this direction; involving thereby undue stretching of the vagina transversely. It is, I have found, most useful as a temporary expedient in cases when a more thorough treatment has to be postponed, and in a few instances it is superior to other pes-

FIG. 66.*



saries. When thickly covered with india-rubber, this pessary acts somewhat after the method of the old-fashioned disk pessary.

Dilatation and Moulding of the Uterus as a Cure for Retroflexion.—Some years ago Dr. Moir of Edinburgh suggested and practiced a method consisting of dilating the uterine canal by tents and the subsequent wearing of a stem-pessary; the

* Fig. 66 shows a combined stem and Hodge pessary. The shape of the Hodge pessary in the above figure is not the best that could be devised; the Albert Smith type is best modified according to the requirements of the case.

object being to overcome the resistance and flexion by full dilatation in the first place, and use of the stem afterward to maintain the straightness. The method is undoubtedly sound in principle, and could be employed in chronic obstinate cases with advantage (see later chapter on Methods of Dilating Cervix Uteri). Schultze* has more recently adopted the plan of dilating first by means of tangle tents, and afterward injecting carbolic acid or dilute iron solution to promote contraction. He uses also a vaginal pessary of figure-of-eight shape to help in restoration. It appears that he has employed the method in a large number of cases without bad result.

The Stem Treatment in Cases of Retroflexion.—It has already been stated (p. 234) that as a rule the stem treatment is best adapted for anteflexion cases. I have occasionally treated cases of retroflexion with the aid of stems, and successfully; but in the large majority of cases I have found the ordinary plan the best. In the last edition of this work was figured an instrument I have used for the purpose. It consists of an ebonite stem fitting into a vaginal pessary on the Hodge principle, so that it has a double action. My own impression is that the stem pessary should, if adopted, be used in conjunction with the vaginal pessary, as shown in the annexed figure. It is essential that the stem be kept thoroughly in the canal of the uterus and not allowed partly to escape, also that it should not touch the top of the fundus, and it is certainly less likely to wound the uterus if the fundus be at the same time supported from behind by the aid of the vaginal pessary.

Incision and Immediate Rectification.—It has been proposed to incise the uterus from within in order to relieve the flexion by an operation which is a modification of one which has been largely practiced by Dr. Marion Sims for stricture of the uterine canal.

The latest phase of this procedure is an operation described in the "*American Journal of Obstetrics*," June, 1876, by Dr. Lennecker of Chicago, on "The Surgical Treatment of Primary Retroflexion of the Uterus."

He appears to speak only of retroflexion occurring before marriage. The patient is placed in lithotomy position; he then incises the cervix with scissors, front and back; then with narrow knives incises the uterus up to fundus latterly

* *Centralblatt f. Gyn.*, No. 3, 1879.

and *anteriorly* (three incisions), the knives, three in number, being of peculiar shape, the handles bent and adapted to curve of canal. After sponging with iced water, cotton is inserted soaked in carbolic acid to cauterize the incision. This cautery is repeated in 48 hours after use of a two-bladed dilator; then repeated every third day till twelfth; then once a week for six weeks. Ten days after operation a modified Hodge used for eight to ten weeks.

He has operated in thirteen cases; in all complete cure; in three cases pregnancy speedily followed. Of latter: case 6, æt. 19, married 1 year; case 10, æt. 22, married 2 years; case 11, æt. 22, married 6 months.

It is stated that all the cases were cured, and that in three pregnancy speedily followed, but as the ages of the three latter were respectively 19, 22, and 22, the inference is that the retroflexion was not of long standing, and could have been readily cured by less severe procedures.

I have now entirely relinquished the use of the air-ball and stem-pessary described in the last edition of this work.

Radical Operation.—Here may be mentioned an operation performed by Koeberlé of Strasburg, March 27, 1869, for the radical cure of retroflexion by gastrotomy, and fixation of the uterus to the anterior abdominal wall by means of the broad ligament, which, being brought forward, was fastened to the edge of the abdominal wound. Dr. Schetelig, who describes the operation,* states that the patient recovered, and the displacement of the uterus was cured. The patient's age was twenty-five. The duration of the malady was $2\frac{1}{2}$ years. The operation is a curiosity and the procedure ingenious, but it obviously involves a confession of deficient mechanical resource of the less dangerous kind.

Oöphorectomy (Battey's operation).—In cases deemed otherwise incurable, the operation known as Battey's operation has been in some instances practiced. Such an operation can only be required or considered justifiable in very extreme cases. My own experience is that with time and patience even the worst cases are curable. It is possible that there may be cases in which a long course of treatment would not succeed, but I have not as yet met with such cases. This subject will be again referred to in the chapter

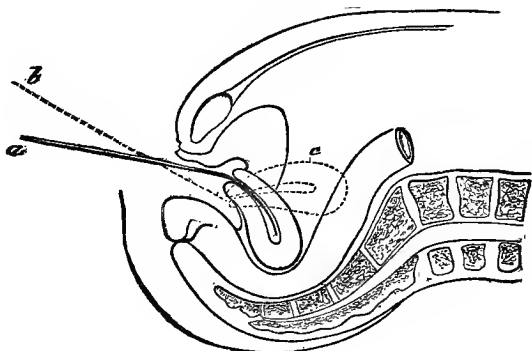
* Dr. Schetelig, Ueber eine Radicaloperation zur Beseitigung der Retroflexio und Retroversio Uteri; *Sep. Abdr. a. d. Centralblatt f. d. med. Wissensch.* 1869. No. 27.

on "Diseases of the Ovaries." Here I may say, however, that some of the published records of cases of oöphorectomy in which chronic retroflexion existed appear to me to offer conclusive evidence that the uterine displacement might have been cured, and the operation thus rendered unnecessary, by further and more patient efforts to cure the retroflexion of the uterus.

[Dr. Simpson was the first to teach us how to diagnose, and how to rectify a retroversion.

He passes his uterine sound to diagnose the position, and then turning it half a circle, the retroverted fundus is nec-

FIG. 67.



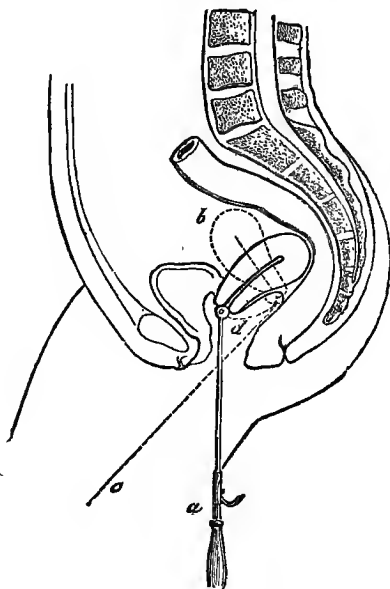
essarily elevated toward the promontory of the sacrum. But this operation often produces great suffering and sometimes hæmorrhage, and I have not for many years used Simpson's sound as a redresser. I have not seen any more serious accident from it. Some object to the instrument and ostracize it altogether, because perforation of the fundus and death have followed its injudicious use. I object to it only as a redresser. Its principle of action is wrong, and hence the pain and suffering it produces. I only wonder it has not done greater mischief. Let us for a moment look at its *modus operandi*.

Fig. 67 represents a retroverted uterus with Simpson's sound introduced as a redresser.

Now if we turn the handle of the instrument (a) on its own axis half a circle, the distal end will elevate the uterus

from its abnormal position to that shown by the dotted figure (*c*); but in doing this it will describe a semicircle of but little less than two inches and a half radius, sweeping the fundus around with the whole weight of the organ, supported principally on the very end of the instrument which, in its gyration, changes its point of pressure from the posterior to the anterior face of the uterine cavity. To

FIG. 68.



elevate the fundus still more we push the handle (*b*) back toward the perineum, which thrusts the uterine end upward.

Is it to be wondered at, then, that we occasionally meet with patients who look upon the uterine sound with the most painful recollections? Seeing that an intra-uterine force was occasionally necessary for the rectification of this malposition, my father devised the following instrument in 1856 and has used it ever since.

Its principle of action is that of elevating the fundus in

a straight line instead of a circle, and of supporting the weight of the organ on a disk at the os tincæ instead of the distal end of the instrument at the fundus.

For this it is only necessary to make a joint or hinge in the sound, about two inches from its uterine extremity, and fix a disk or plate there, as a point of support for the weight of the uterus.

For instance, let Fig. 68 represent a retroverted uterus, with a jointed sound (*a*) introduced, the joint being at the os. Now all that we have to do is to push the mouth of the womb downward and backward in the posterior *cul de sac* in the direction of the place which was at the inception of this movement occupied by the fundus. By this manœuvre the os tincæ describes the small arc of a circle represented by the dotted line (*d*), while the fundus being elevated in a right line describes a larger one and takes the position (*b*), the handle or shaft of the instrument being represented by the dotted line (*c*). If the instrument be properly adjusted this operation is effected without suffering to the patient or injury to the uterus. If there are adhesions we can measure very accurately their resistance and extensibility. This instrument is simply Simpson's sound with a joint or hinge two inches from its uterine extremity, but its *modus operandi* is very different. One elevates the uterus in a right line, the other in a circle to the right or left; one supports the weight of the organ on a ball or disk at the os, the other principally on the point of the sound in the uterine cavity; one elevates the uterus by a power exerted on the cervix, the other by a like power on the fundus; one seldom produces pain, the other often does.

This instrument is sometimes valuable in assisting us to diagnose the relative position of small tumors on or near the uterus.

Thus, suppose we have the uterus impaled with a stem (*a*) at right angles with the shaft, its body being thus held firmly in the centre of the pelvis with the fundus pointing to the umbilicus—by pulling the handle of the instrument forward while it is thus rigidly fixed, we can draw the body of the uterus toward and very near the inner face of the symphysis pubis; by pushing it back, we can carry it directly backward as far as the depth of the vagina and the sacral promontory will allow it to go; by turning the handle from side to side, we can at will throw the fundus

to the right or left as we please, and all this without injury to the organ itself, for its whole weight is supported, as before said, not on the point of the instrument, as when we execute any of these movements with Simpson's sound, but on the disk at the os tincæ; and while we are thus changing the position of the uterus we can, by a finger in the vagina or rectum, and by palpation externally, determine whether any suspected tumor be attached to the uterus by sessile adhesions or by ligament only; or whether the two be entirely separate and independent of each other.

The intra-uterine portion of the elevator is malleable, because we may sometimes wish to curve it a little to suit the peculiarities of some special case.

Ordinarily this stem should not be more than two inches long. It should never be long enough to touch the fundus uteri by any possibility.

In its use we should be careful to keep the ball or disk always pressed well up against the os tincæ, for if it should slip down half an inch or more we shall fail to elevate the fundus, as the whole power of the instrument will then be expended only in pushing the os tincæ backward and doubling the cervix on itself.

Almost every day we have need of the uterine redresser. Where we have a chronic reflexion with enormous hypertrophy of the posterior wall it is almost impossible to replace it merely by manipulation alone. In England it is the habit with best practitioners to push the uterus back as far as possible with the finger and then introduce a Hodge pessary or some modification of it to complete the replacement of the organ. This is bad practice and is often attended with mischievous results. We should never apply a pessary in cases of retroversion till we have placed the uterus in a complete state of anteversion, whether by manipulation or by the redresser. Where the displacement is of long standing the uterus should be replaced by the redresser every day for two or three days, after which we may insert a pessary of the Hodge order.

The pessary must be moulded and fitted to the peculiarities of the individual case. It must not be too large or too small, too long or too short, too wide or too narrow, too curved or too straight. It must hold the womb in its proper position, rather anteverted than retroverted. It must not produce the least feeling of discomfort or pain. It must not press anteriorly on the neck of the bladder, nor pos-

teriorly on the cervix. In short, if the patient is conscious of its presence, except in the relief it gives, it must be promptly removed.

It is dangerous to leave an instrument in the vagina even for an hour if it produce pain. Nothing requires more care than the adjustment of a pessary for the treatment of uterine displacements.

The whole art of it is: first, in replacing the uterus perfectly; and second, in adjusting an instrument to hold it perfectly and comfortably in position.

The pessaries should be made of some malleable material, so as to mould it to fit the case. Our author uses india-rubber on a malleable copper wire. This is objectionable on account of the disgusting odor of the rubber.

Dr. J. Marion Sims has used block tin for this purpose for twenty-five years or more. Otto makes a very cleanly instrument of celluloid on copper wire. The camphor odor is not objectionable. The ordinary hard-rubber pessary can be bent in the desired shape by greasing it and passing it rapidly to and fro through the flame of a spirit lamp till it is soft enough to be curved or moulded as we wish.

The patient should return from time to time to see if the instrument is answering its purpose. Or she should be taught how to remove and replace the instrument.]

CHAPTER XXI.

ANTEFLEXION AND ANTEVERSION OF THE UTERUS.

IMPORTANCE OF ANTERIOR DISPLACEMENTS AND FLEXIONS CONSIDERED.

—Frequency with which these Conditions give rise to Uterine Dyskinesia—Great Frequency of this latter Symptom as observed in Practice.

DEFINITION.—Difficulty hitherto Experienced in Definition—Owing to Existence of slight Anteflexion in normal Uterus—Owing also to Misapprehension of true nature of Congestion of Uterus associated with Anteflexion—Author's Definition: Exceptional Cases when the Definition does not apply—Use of the Finger in making the necessary Exploration—Precautions to take.

ETIOLOGY.—Predisposing Causes—Discussion of Schultze's views as to Movement of Uterus when Bladder is Emptied—Author's Dissent from Schultze's Conclusions—Importance of Softness of Uterine Tissues and want of Rigidity as Causing Anteflexion—Previous Pregnancy—Rupture of Perineum—General Physical Weakness and Prostration—Spe-

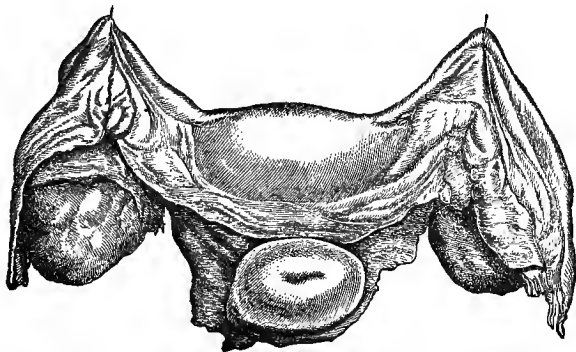
cial or Exciting Causes: Traumatic Causes, their great Frequency—Previous Attacks of Parametritis—Schultze's "Pathological Antelexion"—General Perimetric Fixation result of Antelexion of long standing.

The anterior displacements and flexions of the uterus are real and serious ailments, although there are not wanting authorities who dispute this view.

At the present day, however, many gynæcologists of repute recognize the importance of anterior displacements of the uterus. The growing feeling of the importance of these maladies is shown in the fact that very numerous mechanical appliances have been recommended for their relief.

In reference to the question as to the "importance" of

FIG. 69.*



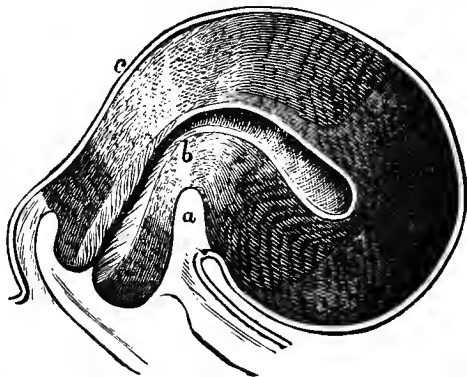
these affections it will be found on considering the matter that the question really at issue, but which many who have discussed it have not thought it worth while even to allude to, is this: Taking the case of a patient who is suffering from symptoms referable to the uterus, what is the actual explanation of the pain or discomfort, or particular symptom, which induces the patient to seek medical advice in such cases? Having for many years systematically endeavored to procure an answer to this question in every individual case which has come before me, I have arrived at the conclusion that anteversion and anteflexion are maladies having a very high degree of "importance." The general

* Fig. 69 shows a very marked case of anteflexion. The drawing represents a specimen from University College Museum.

considerations which have led me to arrive at this conclusion may be stated as follows:

In the first place, attention must be directed to the great frequency with which patients coming to consult us complain of pain or discomfort of various kinds *on motion*. In the chapter on Symptomatology this subject has been fully discussed. The analysis of this symptom, which I have designated "uterine dyskinesia" shows clinically in the most conclusive manner its dependence on an exaggerated motion or mobility of the uterus in one direction or another; and a multitude of observations extending now over many years has proved to me that the generalization

FIG. 70.*



is a sound and a true one. Further, it can be abundantly shown from clinical evidence that sufferings coming under this head constitute the large proportion of the complaints of patients seeking advice. Here we have therefore two points of importance: (1) That certain mechanical motions of the uterus give rise to pain and suffering; and (2) that such mechanically produced pains constitute the greater part of the affection present. For, in the patient's estimation at all events, what she feels is to her the disease.

In the next place, an extended observation has shown that there is a very close connection between certain degrees of anteversion or flexion, and marked uterine dys-

* Fig. 70 exhibits acute anteversion of the uterus in profile, sectional view, become chronic.

kinesia, and that the latter is almost invariably associated with the former (unless in cases where the flexion or displacement is in the backward direction). A definite symptom is thus found to indicate so generally a definite condition of the uterus that it is obviously a relation of cause and effect.

A further set of proofs consisted in observation of the effects of rest, maintenance of the uterus in its proper shape and position, etc., in removing or alleviating this particular set of symptoms. This effect is most marked, and here again observation, repeated over and over again, has shown that these symptoms of which the patient complains so much give way to a treatment which is essentially a mechanical one; and cease in direct proportion to the success of the measures taken for preventing and restraining the abnormal movements of the uterus, and for restoring the organ to its proper shape.

It is thus by observations, repeated day after day, for some years past, and which may in one sense of the word be termed "experimental," that conviction has followed as to the real and substantial influence exercised by anteversion and flexion of the uterus in the production of the pain, suffering, and discomfort of various kinds of which patients so commonly complain.

The same reasoning and the same conclusions apply to retroversion and retroflexion, and the foregoing statement concerns the posterior equally with the anterior displacements of the uterus. The reason for making the statement, in this place, is that while retroflexion and retroversion are admitted, with very few exceptions, to be maladies, it is not so in regard to anteversion and anteflexion: and I desire to point out how and why it is that I have been led to regard the latter as substantial and important affections.

It is not intended, in the foregoing remarks, to imply that "uterine dyskinesia" is the only severe symptom in cases of anterior flexion. Other symptoms are important also, but they are better known, and duly recognized as such, by those who have given attention to the subject.

Definition.—It is now necessary to give a *definition* of anteflexion and anteversion.

The question resolves itself into this: What degree of anterior flexion or anterior version is to be considered abnormal?

The particular point at which I find myself at issue with

some writers and practitioners of repute is in regard to the importance of the lesser degrees of anterior flexion and version, and their capability of producing symptoms of a troublesome character. The basis of my conclusion is, as already stated, a prolonged series of clinical observations on this subject.

With reference to the *more severe degrees of anteflexion and version* the number of scientific observers who recognize their importance is very considerable. There are only a few left who still deny the practical significance as diseases of the more severe cases of anterior displacement. As regards the importance of the less severe degrees of anterior flexion and version the number of converts still to be made is more considerable.

There can be no doubt that the principal cause of the reluctance to recognize the anterior displacements as diseases, is the notion that inasmuch as the uterus has a slight normal curvature and inclination forward, further degrees of that curvature and inclination forward cannot have any practical importance. The prevalence of this notion is and has been so great that few have taken the trouble to differentiate the various degrees of anteflexion and anteversion.

This is not the only reason for the neglect which the subject has received. Another reason has been the complication of congestion of the uterus so frequently met with in these cases, which complication has received exclusive attention, while the displacement has been either not recognized at all (as is most commonly the case), or, if recognized, has been regarded as an affair of quite secondary importance. Having had frequent opportunities of meeting practitioners in consultation in cases of this kind, I have formed the conclusion that one reason why so little is known as to the frequency and effects of anterior displacements is that the very simple and easy exploration of the condition of the uterus, by means of a digital examination, is little practiced. Over and over again it has happened in cases brought to me for consultation that marked anteversion or flexion has existed and remained undetected for this reason and this reason alone: the condition has been unrecognized simply because it has not been looked for. The too exclusive use of the speculum and the too general concentration of attention to the condition of the os uteri is responsible for this too common omission of the digital examination.

Thus it happens that these affections have been comparatively neglected, sometimes because they have not been looked for, sometimes because, when known to exist, they have been misinterpreted. We may now proceed to the definition, which I would give as follows:

Abnormal anteflexion or version exists when the fundus of the uterus can be felt by means of the finger introduced as far as the middle of the proximal phalanx, the patient lying on the side and the knees drawn up in a favorable position for such examination. For the application of this definition it is to be assumed that there is no tumor or considerable enlargement of the uterus.

The above definition covers by far the majority of cases, but not all. For in some exceptional instances the uterus lies rather high and yet it is much and abnormally anteflexed.

Neither does it cover those cases where the uterus is excessively mobile and the fundus retreats before the point of the finger, for in such cases the condition might be overlooked.

Neither does it provide certainly for the recognition of anteflexion in cases where the uterus is excessively soft, for the uterine fundus under such circumstances may not be easily felt by the finger, though the uterus is undoubtedly in a state of anteflexion.

Neither does it provide for recognition of cases of anteflexion with retroversion, to be explained further on. It will be found on practicing the investigation above described that the lower border of the triangular ligament corresponds to the joint between the proximal and second phalanx of the finger. It is generally easy to introduce the finger as far as this by placing the patient in a proper position. I consider it necessary to insist on the observance of this latter condition, because the drawing up of the knees enables the observer to introduce this finger nearly an inch farther than can be done when the patient is in any other position.

Theoretically the condition of the bladder might be supposed to modify the results of the examination. But practically it is found not to be the case, for if abnormal anteflexion or -version be present the fundus of the uterus is generally, though not invariably, always within reach as above described.

To come within the above definition the uterine body

must have become materially flexed or rotated forward from what has been described in some of the former pages (see page 164) as the normal position of the uterus, or the uterus must have as a whole descended much lower in the pelvis than usual.

It will be found that, without using any force, it is generally possible easily to introduce the finger to the extent of three inches, and when the fundus is easily reached, and its outline definable within this distance of the ostium vagina, a displacement exists.

The question as to the normal position and normal motion of the uterus has been already fully discussed at page 167.

The range of normal anterior motion which I would assign to the uterus is represented in the accompanying drawing (Fig. 71). The labia majora offer a projection externally, and a portion of the three inches constituting the available length of the finger is occupied in traversing the vulva, generally as much as one inch (in cases of obesity more than this), so that only two inches are left for the exploration of the vagina proper. It is possible to introduce the finger farther than this by exercising some degree of pressure, but the above definition applies to ordinary exploration, without exercise of undue pressure. (See Fig. 8, showing the line of direction of a digital examination.)

When the motion of the uterus does not exceed what has been above laid down as the normal limit, the space left between the uterine fundus and the pubic symphysis is as nearly as possible one inch and a half. When the fundus encroaches on this space, therefore, the position is abnormal, unless it can be accounted for by increased size of the whole organ. This latter condition would obviously have to be eliminated.

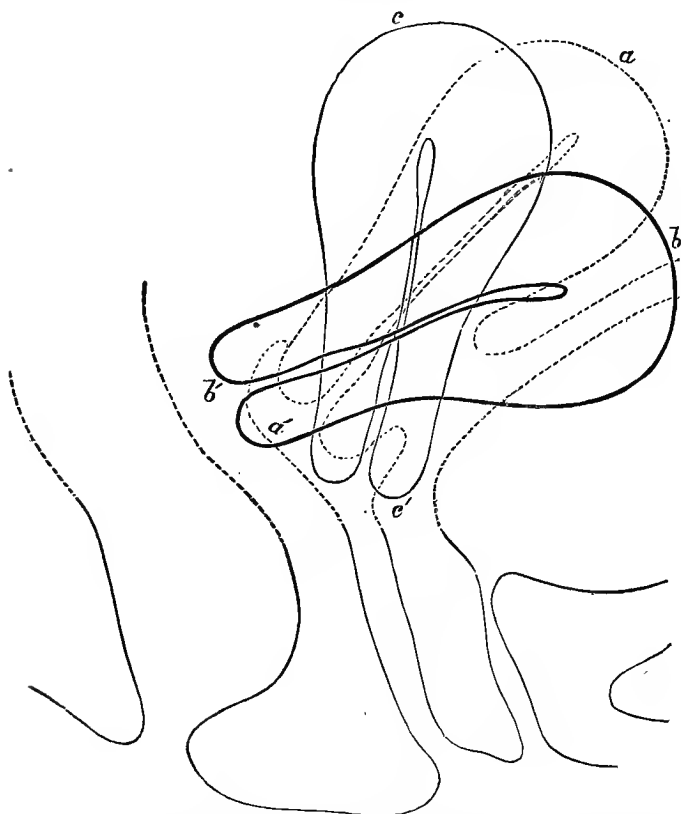
Anterior displacement beyond the limit mentioned would bring the fundus within the reach of the finger, introduced to the medium degree, as above described.

There are cases in which circumstances prevent the recognition of the fundus by the digital examination, some of which have been mentioned. It must not, therefore, be concluded absolutely, because the fundus cannot be detected by the touch in the manner directed, that no anterior displacement exists.

It is to be remarked that the directions given suppose the patient to be lying on the side. It is obvious that this is

not the most favorable position for the detection of a slight anterior displacement. A slight anterior displacement would no doubt be more readily detected by the touch in

FIG. 71.

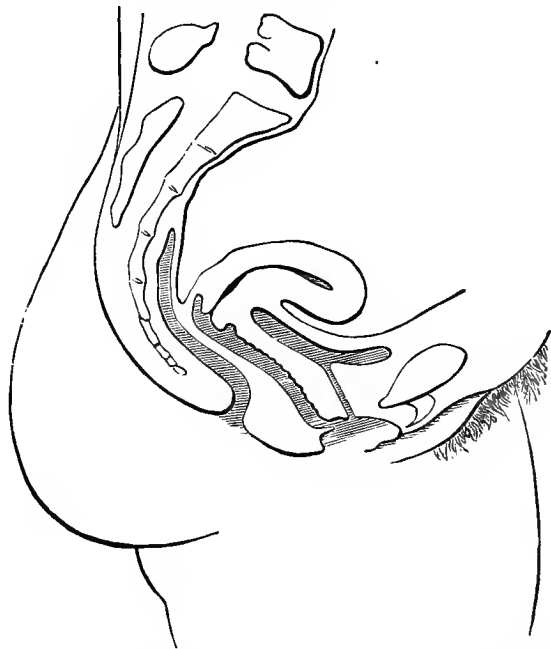


the upright position. But this consideration is in favor of the definition as above given, for the patient being in the lateral position, a too unfavorable view of the case would not be so likely to be given by the digital examination. In severe cases of anteversion and -version, the uterine fundus is very readily reached, whether the patient be standing or lying on the side.

ETIOLOGY.

Predisposition.—There can be no doubt that there is what may be termed a special predisposition to ante flexion and -version in the *natural slight inclination of the uterus forward*, and in the fact that there is normally a very slight anterior curvature of the uterine canal. Aided by its own natural firmness and rigidity, and supported to a certain extent by

FIG. 72.*



the moderately distended bladder, the position and shape of the uterus are in a state of health preserved.

The relations of *varying conditions of the bladder* to the *normal* movements of the uterus have been considered at p. 173. Here it is necessary, however, to discuss the matter further,

* The above drawing is Schultze's representation of what he considers to be the normal outline of the uterus (nulliparous), after emptying of the bladder and rectum. (*Arch. f. Gyn.*, 8. 142.)

as it has a considerable bearing on the subject now under deliberation. In opposition to the views of Schultze * I would repeat that the results of my observations do not sustain his view that the *healthy* uterus becomes decidedly anteverted and slightly flexed when the bladder is empty. I believe, on the contrary, that the space in the pelvis derived from the emptying of the bladder is ordinarily filled by the descent of the intestines, and that the uterus retains its normal (slightly curved forward) shape under such circumstances. I therefore dispute the occurrence of what Schultze terms normal anteflexion and -version, at all events to the degree described by him. It seems probable that the case or cases from which Schultze took his drawings of so-called normal anteflexion would only truly represent what may be observed in cases where the uterus is soft and unduly pliable, but then I should deny the applicability of the term "normal" to such cases. This author, whose able memoirs on the subject may be consulted with advantage, appears not to have noticed what I consider to be a most important factor—namely, the softness or hardness of the uterus. Assuredly this must be taken into account in any attempt to lay down a law as to the definition of normal and abnormal anteflexion.

In the chapter on Etiology of Flexions *softness of the uterus* is mentioned as a powerfully predisposing condition. Here these observations apply with peculiar force. A very extensive observation has convinced me that it is a factor of the extremest importance in bringing about anteflexion and -version. What this undue softness of the uterus means has been discussed in a former chapter (see p. 98). This want of tone, want of rigidity and resistance, on the part of the uterus, places it at the mercy of external influences of a mechanically disturbing character. A year or two of deficient or insufficient feeding suffices to produce decided uterine softness, and ordinary exertions may then prove too much for the stability of the uterus. The acquired softness, the natural inclination of the uterus forward, a slight exertion, all coming together, have then the result of bringing about mischief of a decided character. My knowledge of softness of the uterus as a predisposition to flexion was the result of observation of cases of anteflexion, and I have been familiar with this softness as a

* *Arch. f. Gyn.* 8. 134.

frequent condition long before it occurred to me to give a satisfactory explanation of it.

Previous pregnancy is responsible for innumerable cases of anterior displacement. It acts as a predisposition by loosening the attachments of the uterus, leaving it in a soft bulky condition; and under these circumstances it readily gives way when the patient begins to move about, especially if there be added the debilitating influences of a deficient dietary during child-bed. In some cases of abortion the malady begins with the abortion and becomes firmly established when the uterus is allowed to set and become contracted in its distorted condition.

Rupture of the perineum in some cases favors the occurrence of anteflexion and -version. I have seen several cases in which the perineal injury seemed to have been the starting-point of the displacement.

Lastly, one of the most common of the predisposing causes of anteflexion and -version is general physical weakness and prostration. Of such typical instances are the weakness produced by typhoid fever, measles, scarlet fever, and the like. I have seen several cases where the malady began unmistakably on getting up from a severe attack of fever, and some of the most severe cases of anterior displacement I have witnessed have been of this kind. It is not, however, necessary that the physical exhaustion should proceed from fever. There are many other depressing influences which might be mentioned. They mostly act by reducing the tone of the uterus, softening its tissues, and by virtue of that alteration, predisposing to distortion of the organ.

Special or Exciting Causes of Anteflexion.—The evidence afforded by the critical investigation of cases is most remarkable in showing the very great influence of mechanical disturbing agencies in the production of anteflexion or -version.

It is to be remembered that while a single accident or severe strain has evidently been the cause in a number of cases, there are many others in which the application of the cause has been spread over a considerable time, the uterus having been displaced by the continued—*i.e.*, daily—operation of a particular exciting cause. Daily severe walks, daily standing for many hours in succession, as in the case of shop-women, severe and long-continued standing while nursing a sick relative—these are instances of the kind al-

luded to. Riding on horseback, use of a sewing machine, are other causes of a like character—the mischief being done not necessarily at once, but by slow degrees.

There is no doubt that marriage is the cause of anteflexion in some instances: the uterus becomes displaced as a result of the act of intercourse in some exceptional cases.

Some few cases of severe anteflexion and -version arise from exertion, combined with a chill received during menstruation, which I attribute to the occurrence of exudation or thickening around the uterus, result of the menstrual suppression, whereby the uterus becomes more or less fixed in a distorted shape.

The relation of inflammatory exudations, effusions around the uterus, parametritis, etc., to anteversion and -flexion, has been the subject of a paper by Schultze.* This author believes that a principal cause of what he terms “pathological anteflexion” of the uterus is rigidity and shortening of the Douglas folds behind the uterus, which rigidity is the result of chronic atrophic parametritis affecting the connective tissue in the Douglas pouch. Schultze states that he has very frequently found this posterior fixation along with anteflexion. There is no doubt that undue shortness of the Douglas folds might produce such an effect, but it is another question whether the occurrence is at all common. Here, again, it may be suggested that in the cases alluded to by Schultze, the really abnormal condition may have been a very soft anteflexed uterus, and that the supposed posterior fixation was only normal. Schroeder and Müller (of Berne) contest the accuracy of these views of Schultze. I have in some few instances met with a condensed resisting condition of the connective tissue around the Douglas pouch, in cases of anteflexion, where there had been pelvic cellulitis. Abnormal shortening and rigidity of the Douglas fold is, according to my experience, very rare.

It is, however, not uncommon to meet with what may be termed parametric exudation and hardening around the uterus, so far as can be explored by the finger, in cases of anteflexion and -version of a chronic character. Such hardening and contraction of the cellular tissue acts as a *fixation* of the uterus, and indeed offers difficulty in elevating and straightening it. The exudation in question is not,

* *Archiv. f. Gyn.*, 8. 1.

however, the cause of the flexion and displacement, but precisely the opposite—it is the result of it. Pelvic cellulitis may give rise to a localized effusion which may push the uterus quite away from its proper position to one side or the other, or backward or forward, and the organ may be thus pinned down as it were by such exudation, though instances of this kind are not common. This subject will be again considered in describing the complications of ante-flexion and -version.

CHAPTER XXII.

ANTEFLEXION AND ANTEVERSION OF THE UTERUS— (Continued).

VARIETIES.—1. In Degree of Flexion; 2. Degree of Rotation of Uterus; 3. Degree of Descent of Uterus as a Whole; 4. Rigidity of Uterine Tissues—Various Combinations of these possible, hence Infinite Differences of Cases—Three Principal Degrees of Flexion—Some Leading Types Described—Various Conditions of Cervix—Anteflexion with Posterior Rotation—Severe Cases in which the Uterus is very low down, compressing the Rectum—Variations in Rigidity of Uterine Tissue and Connections—Clinical Features of Different Cases—Illustrative Cases given—Degree of Congestion.

COMPLICATIONS.—Congestion, Accessions of Acute Congestion—Distension of Cavity—Adhesions—Cystocele—Cystitis—Constipation.

SYMPTOMS.—Uterine Dyskinesia—Illustrative Facts in regard to this observed in Thirty-three “Fertile” Women and in Thirty-five Single Cases—Spontaneous Pain—Tenderness of Uterus to Touch—Other Abnormal Sensations—Dysmenorrhœa, Menorrhagia, Leucorrhœa, Amenorrhœa—Sterility—Abortions—Dyspareunia—Reflex Nervous Symptoms—Symptoms referable to Bladder; to Rectum.

DIAGNOSIS.—Various Difficulties—Method—Use of Sound—Precautions and Difficulties in Introducing it in Different Cases.

VARIETIES.

In the chapter on Retroflexion and -version a certain method of classification has been adopted which may with advantage be followed so far as the circumstances admit in regard to anteflexion and -version. Reasons have been there (see p. 252) given for using the word “rotation” instead of “version,” and the same reasons render it convenient to employ this term in describing the varieties of anteflexion and -version.

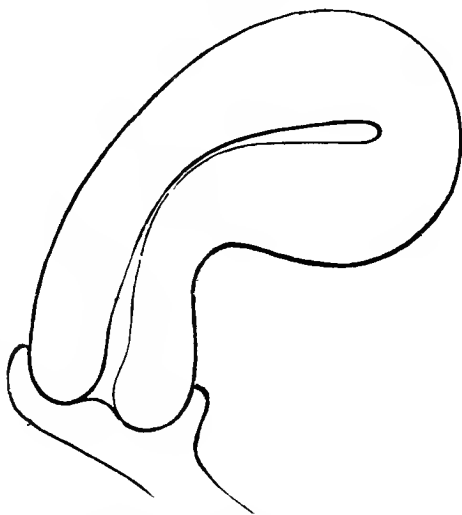
Cases may be classified according to

1. Degree of flexion—first, second, or third, as the case may be: also the variations in the position of the flexion.

2. Degree of rotation.
3. Degree of descent of uterus as a whole.
4. Degree of resistance offered by the uterus itself to unbending or replacement.
5. Presence or absence of (*a*) congestion, (*b*) enlargement.

Seeing that in practice the several factors above detailed are combined in different ways in different cases, it becomes

FIG. 73.

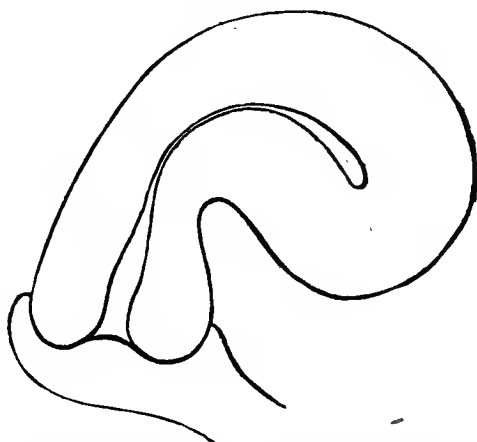


evident that infinite varieties may be observed. It is a conclusion to which all who study the subject practically will come, that hardly two cases are found exactly alike. The appreciation of this fact is necessary for success in treatment, every case having peculiarities of its own. The above classification will serve to indicate the points to which attention must be directed in obtaining a definite and broad view of the particular case before us.

Anteflexion of the uterus, according to Dr. Emmet, affects generally the cervix of the uterus, rarely the body. My own idea on the subject is not in agreement with this view, although it is no doubt the fact that many cases are observed in which the flexion is below the internal os uteri.

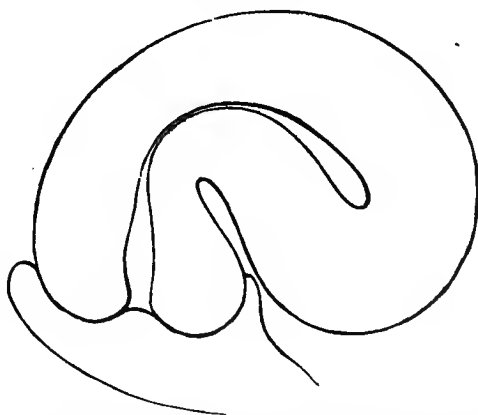
What may be termed the typical varieties of ante flexion and -version will now be described.

FIG. 74.



The most simple case is that in which the uterus is flexed to first degree, the fundus too far forward, and the os uteri

FIG. 75.



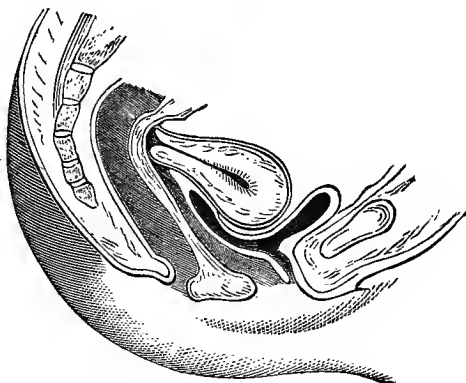
a little nearer the sacrum than natural (Fig. 73). With this is frequently associated the first degree of rotation forward

(the latter not shown in accompanying drawing); a second degree of ante flexion is shown in Fig. 74, together with a slight amount of rotation. This may be associated with a much more severe degree of rotation than that shown in the drawing.

A third and very severe form of ante flexion is shown in Fig. 75, together with some degree of rotation.

The curve offered by the uterine canal in cases of ante flexion is, according to my experience, a gradual one; there is no sudden alteration in the direction of the canal: such a sudden change in direction is not possible under ordinary circumstances, the bend offers degrees as above stated—

FIG. 76.



first, second, and third—but the bending is distributed over three quarters of an inch of the canal, more or less, in ordinary cases. The Figs. 74 and 75 represent this. The actual centre of the bend may be higher or lower than the internal os uteri.

Rotation is found in very different degrees in different cases. Thus we may have an extreme degree of rotation with little or no ante flexion. Such cases have been termed ante version pure and simple. They are by no means common; the uterus lies almost parallel to the vaginal canal; the fundus is very near to the symphysis pubis, and the posterior wall of the bladder lies in close coaptation to the base of the bladder, with no appreciable interval. Such a case is shown in Fig. 76. The os uteri is reached by the

finger with great difficulty, as it lies so far back in the hollow of the sacrum.

As a rule rotation is not very great when the degree of flexion is considerable, and in this respect there is a difference between cases of ante flexion and retro flexion; the

FIG. 77.

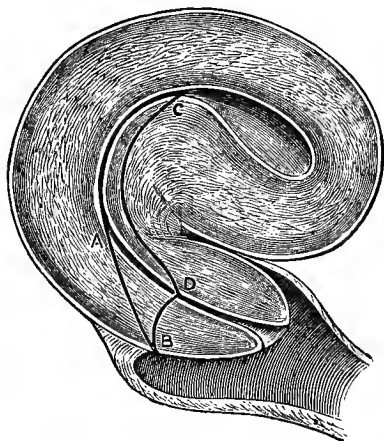


bladder offers an obstacle to very considerable anterior rotation. Fig. 77 shows three degrees—(1) first degree of ante flexion, (2) second degree, (3) third degree—of flexion, together with the more usual accompanying degrees of rotation.

The condition of the vaginal part of the cervix differs

very much. In some cases it is nearly straight with the os directed distinctly backward; but in many instances it is bent forward, so much so indeed that the opening of the os uteri does not look toward the vaginal outlet but upward and forward. Thus we sometimes meet with anteflexion in the third degree with the whole uterine canal having the form of a parabolic curve, the flexion as great as it can be. This kind of case is more often met with in young women who have had no children; the cervix has a conical shape and is frequently unduly elongated. This considerable bending of the vaginal part of the cervix is, I believe, due

FIG. 78.*



(as Dr. Emmet remarks) to the repeated forcing down of the uterus against the vaginal floor, whereby the cervix becomes bent and turned upward. It constitutes a condition very troublesome from the severity of the symptoms, and difficult of cure. (See Figs. 78, 79, and 80.) Some observers regard cases similar to those just described as "congenital." Thus Dr. Roper† says:

1. A certain class of cases of anteflexion "are congenital and are not the result of any pathological change in the

* Fig. 78 is Dr. Emmet's drawing of a severe case of anteflexion, the dark line A B C D showing the extent of incisions made in his operation for the cure of this affection.

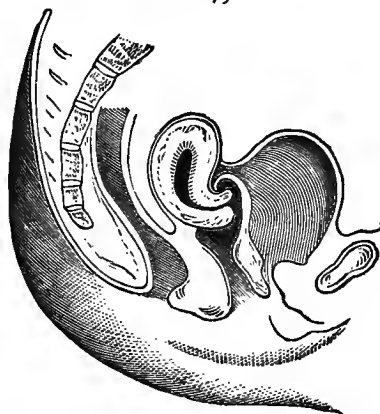
† "Obst. Trans.," vol. xx., p. 304.

uterine texture, but are malformations of the whole or part of the organ."

2. "Acquired flexions generally are associated with some pathological change in the uterine tissue, whether it be one of hypertrophy, atrophy, or degeneration."

He proceeds to explain that in the first class of cases "there is an antecurvature of the uterus running from the top of the fundus to the point of the cervix, extending the whole length of the organ. There is no point on either the cervix or body at which a flexion exists as in the pathologically flexed organ" (*loc. cit.*, p. 305).

FIG. 79.

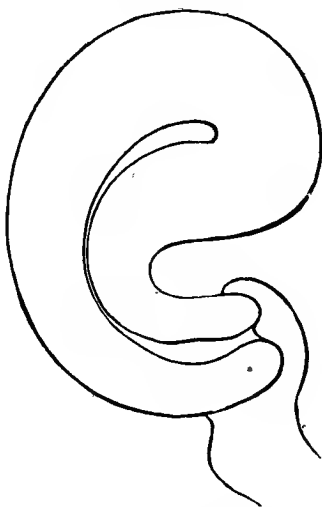


The context shows that Dr. Roper only admits existence of "flexion" when the cervix and the body of the uterus are separated by "an intervening portion of softened tissue."

And when he finds that the uterus is uniformly solid and rigid, mere curvature does not for him constitute flexion. But it is to be remarked that the consistence of the uterine tissues varies: the uterus is generally in a soft condition when the flexion occurs, but it may and frequently does subsequently become firm and hard, although still preserving the flexed condition. Dr. Roper's definition of flexion therefore cannot be accepted, and the cases he would describe as cases of "congenital antecurvature" are, in my opinion, for the most part cases in which the flexion has arisen in the manner above pointed out,

A peculiar variety of severe flexion of the cervix is shown in Figs. 79 and 80; here the uterus is anteflexed in about the third degree, the cervix elongated and directed forward and a little upward. It may be termed severe anteflexion of the uterus *with posterior rotation*. The history of such cases is as follows: Anteflexion to a severe degree first occurs, and persists for a considerable time. The uterus hardens in its anteflexed condition, but subsequently undergoes posterior rotation, by which it acquires the position and shape shown in the drawing. It is not easy to diagnosticate, for the

FIG. 80.



reason that there appears to be a tumor behind the cervix. Moreover, the sound goes in *at first* in the direction backward. The absence of a tumor in front is also misleading; this condition was first described by me in the 1872 edition of this work. I have met with at least a dozen such cases in practice.

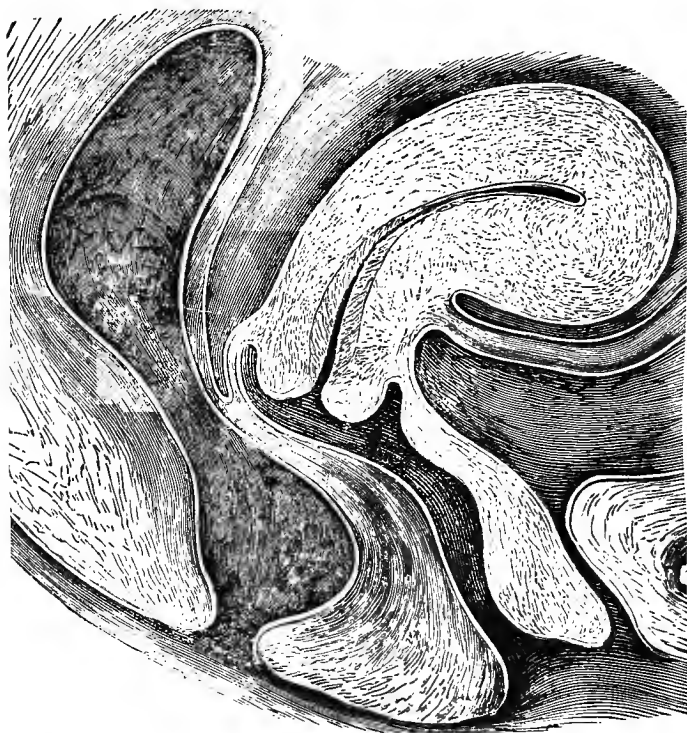
In Figs. 81 and 82 is shown (life-size) anteflexion of the uterus, of different degrees of severity, the position of the adjacent organs being also depicted.

Opportunities are rarely afforded for observing, *post-mortem*, the condition of the uterus in cases of anteflexion. This

being so, I think it will be serviceable to reproduce in a slightly abbreviated form, from the pages of Dr. Ashwell's work,* a case recorded many years ago by that most careful and unbiased observer, Dr. Walter Hayle Walshe.

The case was observed by Dr. Walshe some years before

FIG. 81.



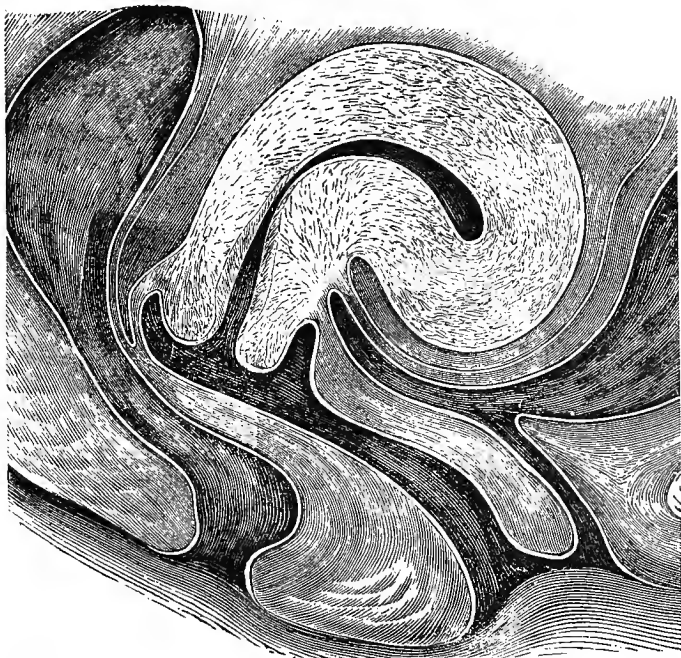
in the wards of St. Louis Hospital in Paris. He gives it as almost unique, the observation of the symptoms being followed by *post-mortem* examination.

Anteflexion and Anteversion terminating Fatally.—V. E., æt. 38. Jan. 9.—Worked as charwoman for last three years; previously portress and housemaid. Had six children, first

* "Diseases of Women," 1844.

at 17, last at age of 23. Menses regular. Subject for last five years to pain near upper border of sacrum after the least fatigue. Her food has been poor in quality: she has not for years been in the habit of eating meat. For a month before Nov. 10 sacral pain increased; only slightly unwell on two preceding periods. On Nov. 10, while engaged in washing, there occurred a sudden hæmorrhage with large

FIG. 82.



clots from vagina. Felt no pain, continued her work. Since has had persistent red discharge, which for a month equalled daily the quantity lost during catamenia, lately less. Inguinal pain at first severe, now less; for last fifteen days occasional pricking pain in left thigh; has lost half her former flesh; scarcely ate anything during first month.

Present State.— . . Defæcation unusually difficult for last two months and increasingly so; no complaint as to

passing urine. Impossible to see orifice of uterus by speculum. *Examination with finger.*—Neck of uterus $2\frac{1}{2}$ inches from vulva; broad, unusually hard, turned backward. Anteriorly, toward pubis, a tumor is felt formed by the body of the organ; on pushing it upward depression of the neck follows. Pulse 76, inodorous vaginal discharge, equalling about an eighth of what is lost daily during menses.

Feb. 12.—Discharge of late increased in quantity, but patient better in her general state. To-day, however, a new train of symptoms—great swelling and tenderness of abdomen, violent pain in hypogastrium, first slightly felt three days ago. Bladder not distended; frequent vomiting of greenish matter, on increase. No relief of bowels for four days; pulse 112, regular, very small; discharge almost ceased; decubitus dorsal; knees raised, features contracted.

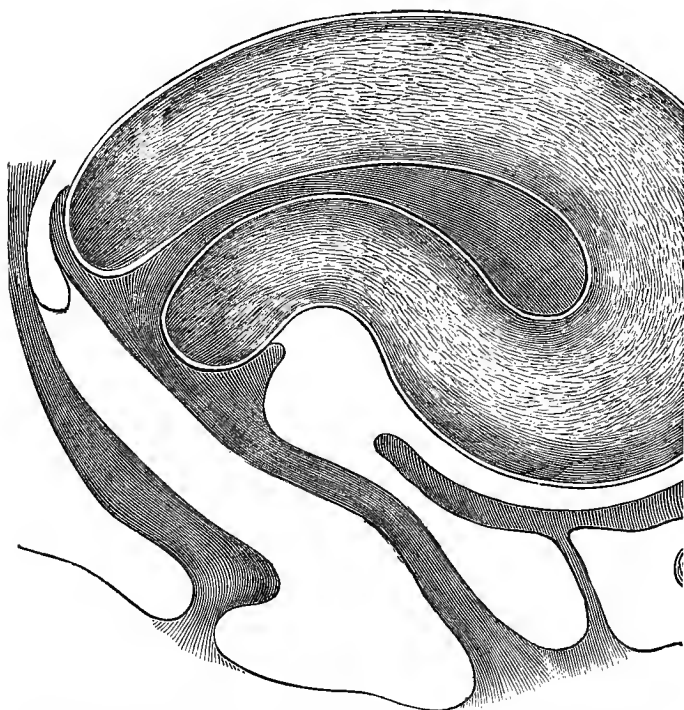
Feb. 13.—Abdominal tension increased; extreme tympanitis; great thirst; pulse 126; respiration 54. *Feb. 14.*—Death.

Post-mortem Examination.—Intestines adherent by false membrane; clot of blood size of egg in Douglas pouch, black in color: "to account for it there appear to be some vessels open." Here, too, are several loculi with pseudo-membranous walls of hardish consistence containing putrid clots. Sigmoid flexure adherent, dull red-colored fluid beneath adhesions, and surface black.

"Uterus flexed on itself at an obtuse angle at the union of its body and neck, in such a manner that the fundus, concealed by the bladder, is inclined forward and downward, while the neck is inclined backward to the sacrum, the posterior surface of the body being antero-superior. There is a slight lateral obliquity in its direction, the neck being turned somewhat to the right of the middle line, the fundus toward the left crural arch. The body of the organ as well as the neck is hypertrophous; their substance is of a grayish hue and hardened, firm and resisting throughout, except at the union of those parts where there is a band of the organ flattened from before to behind, extremely soft, flabby, and yielding, and corresponding exactly to the angle of flexion. Anterior and posterior walls of the body each measure precisely an inch in thickness; neck is $2\frac{1}{2}$ inches wide, its orifice gaping." Right ovary enlarged, divided into cells containing a puriform fluid. Left ovary also divided into loculi with citron-colored serous contents; a small reddish clot in one of them.

The degree of descent of the uterus as a whole is an important factor in all cases. By some distinguished gynæcologists it is asserted that flexion and version are not liable to be attended with symptoms unless the uterus is very low

FIG. 83.*



down in the pelvis. It is certainly the fact that the lower the uterus the greater the evil. So far, but no farther, I

* Fig. 83 represents a severe chronic case of ante-flexion of probably fifteen years' duration, in a patient aged 36. There had been a miscarriage shortly after marriage, and several attempts had been made to rectify the displacement of the uterus. The organ was jammed downward in the pelvis, and in a most irritable condition, much hypertrophied, and a chronic neurosis of one portion of the cervical canal established. Severe nausea, constant pain, locomotive inability, were the chief but by no means the only symptoms.

would express my general assent to the proposition. It generally happens that in cases of ante flexion the descent of the uterus as a whole is a marked feature. The uterus in its flexed condition becomes rotated and at the same time pushed lower and lower downward toward the pelvic floor. And so much is this the case that it is not uncommon to find the os uteri quite close to the tip of the coccyx. Such cases are most troublesome. A typical case of this kind would be represented as follows: The uterus in the second degree of ante flexion, rotation to second degree, the os uteri rather far back, apparently touching the coccyx, the fundus lying very near to the pubic symphysis. Such a case is not uncommon in single women who, after many years' continuous suffering, have become finally incapacitated from active exertions of all kinds in consequence of the pain and discomfort produced by attempts to move about in the ordinary way (see Fig. 83 representing such a case). A very troublesome element in cases where the uterus is on the floor of the pelvis arises from the pressure on the rectum, and the most obstinate constipation often results. I have seen one extreme case in which the uterine cervix actually inverted the rectum and protruded at the anus.

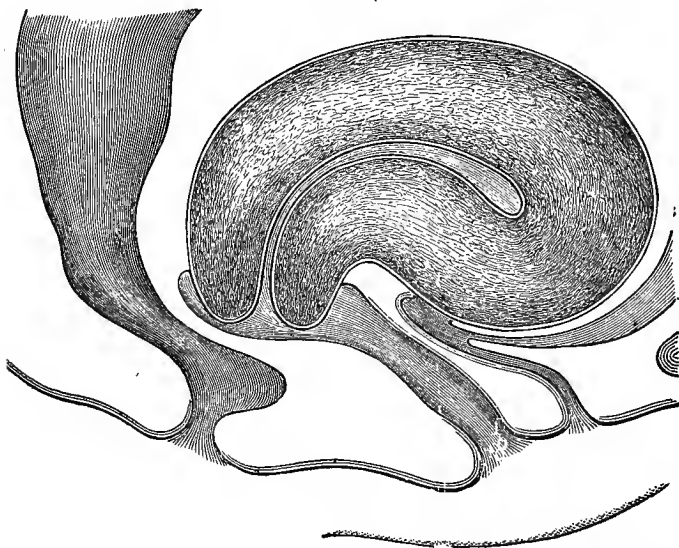
The uterus is not always, however, so low down in the pelvis. It may be acutely flexed and yet retain its normal position so far as elevation in the pelvis is concerned; the flexed fundus is comparatively high up and is reached with less ease than usual. Schultze seems to have met with such a condition rather frequently, judging from his statements on the subject, or rather from the drawing he gives to illustrate his remarks. But it is to be remarked that Schultze believes in normal ante flexion to an extent which I deny. The result of the difference of view is that Schultze naturally finds few cases of (pathological) ante flexion with the fundus low down, whereas such cases are, from my point of view, very common.

Another very important distinction to be made is as regards the *degree of softness or hardness* of the uterus and the difficulty or facility with which the uterus can be restored to its proper position and shape by means of the sound. This applies of course to all the several varieties of displacement above described. Here is an opportunity afforded for what may be termed the general, as opposed to the mechanical, view of the case before us. It is necessary to determine how far the uterus is fixed and hardened in its

disturbed shape, either by a hardening process in its own tissues or by external fixation due to hardening of the cellular tissue and connections of the uterus.

Thus taking a case of the second degree with considerable rotation, we may find the uterus soft and spongy and readily straightened and elevated to its proper position; or we may find it very hard and firm, and the attempt to straighten it is attended with difficulty; or we may find that it is so firmly imbedded and jammed downward be-

FIG. 84.



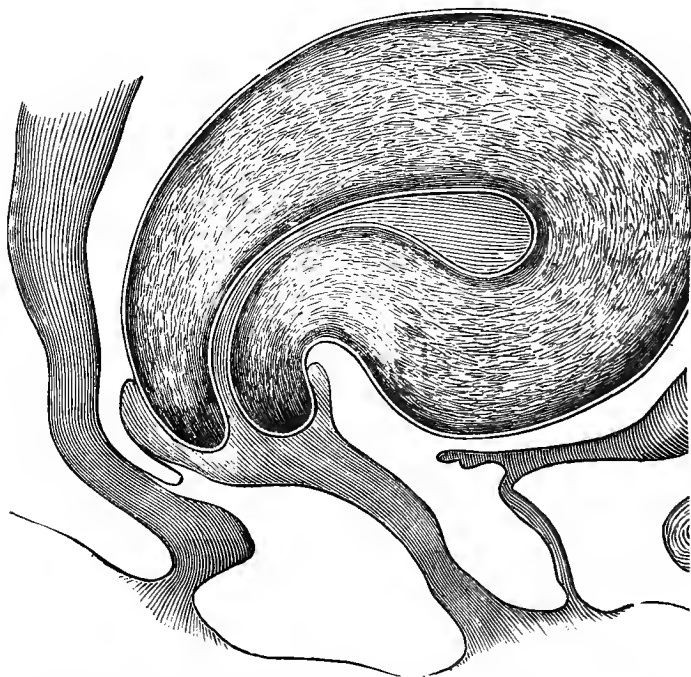
hind the symphysis that its elevation is almost impossible at the moment by the aid of the sound. In long-standing cases the latter difficulty is likely to be encountered. The annexed drawings illustrate the conditions referred to in the last paragraph.

In Fig. 84 is represented a case of severe ante-flexion at age of 19, the subject of which was a patient who had been incessantly sick for ten months, the displacement caused by a jump from a height of six feet. The uterus was large, congested, but soft and spongy in texture.

In Fig. 85 is represented a case of severe ante-flexion at

age of 51, the subject of which was single and had received an injury in getting over a stile when 16 years old. She had been more or less an invalid for years. Here the uterus was very large, quite fixed in its low, anteflexed condition, and it was evident that the malady had been in existence for many years. The two cases above related are quite

FIG. 85.



alike: in both the position is much the same, but in the one the malady was recognized sufficiently early to be quite and rapidly cured; in the other it was not possible to alter the position of the uterus and the time had passed away for attempting it.

All gradations are met with both in regard to the flexibility and mobility of the uterus. As a rule, when the flexion is in the third degree the uterus is not easily straightened. Sometimes we meet with cases where the

flexion is severe but the general mobility considerable; in such cases the uterine fundus is elevated by a slight pressure, but the flexion remains, and although the rotation is reduced, the flexion continues. This fact has an important application in the treatment.

The sound is the instrument by which we are enabled to judge of the degree of rigidity of the flexion, and of the degree to which it resists the attempt to replace and straighten it.

The Degree of Congestion or Enlargement of the Uterus.—Congestion is rarely altogether absent in cases of ante flexion and -version. But it is very much more severe in some cases than in others. The fundus uteri is much larger than usual, due to long-continued chronic congestion associated with ante flexion and partly causing it, and being partly caused by it. First, second, or third degrees of ante flexion may each be associated with slight, severe, or very intense congestion, and there may be various degrees of enlargement. A very common condition in women who have had no children consists in combination of ante flexion to second degree, rotation to second degree, and enlargement of the uterus, especially the fundus, to three times its ordinary size. Conditions more or less severe than this may be encountered. Congestive enlargement with ante flexion is by no means limited to women who have had children.

As a rule, the os uteri gives evidence of considerable congestion; this is more decided in women who have had children. In many cases of pluriparæ the os presents considerable swelling, and congestion especially of the anterior lip. In chronic ante flexion affecting pluriparæ the os uteri presents very great hypertrophy, the result of long-continued congestion.

In not a few cases, also, in pluriparæ there is eversion of the lining of the cervix, and the generally depressed condition of the uterus gives rise in such cases to great friction of the os against the vaginal floor. The congestion and irritation observed at the os uteri in many such cases has long obscured their true nature. These appearances usually result from the general congestion of the uterus itself, produced in most cases by the ante flexion. In some instances they result from lacerations of the cervix uteri during labor.

Complications.—Congestion of the uterus is the most common of the complications of ante flexion, as has already

been stated. The congestion may be *very acute*, giving rise to exceeding sensitiveness to touch, to severe spasmodic pains, to great swelling of the uterus as a whole, to a sort of strangulation of the whole organ. This may pass into a sub-acute and then into a chronic stage. In the chronic stage frequent accession of acuteness may occur. In the end, the uterus acquires great size and permanent hypertrophy. Distension of the uterine cavity is rather common as a complication of ante flexion; the cavity is often of considerable size, forming a large pouch, in which blood collects during menstruation, and puriform fluid at other times.

Adhesions of a peritoneal character do not appear to be common, but fixation is not very rare. It is especially observed in long-standing ante flexions where the uterus is very low down in the pelvis and has carried with it the floor of the bladder. Such a condition, when of long standing, renders restitution of the uterus to its proper shape and position a work of great difficulty. It may be easily confounded (and indeed may be associated) with hardness or rigidity of the uterus itself.

Cystocele is a possible complication of severe ante flexion, the uterine fundus forcing the bladder downward and partly outward. I have seen such a case in a patient who had never borne a child.

In pluriparae, cystocele generally occurs in connection with ruptured perineum; the ante flexion and the cystocele are then traceable to defective perineal support.

Cystitis is, I believe, more frequently the result of ante flexion of the uterus than is supposed. It is very common to meet with extreme irritability of the bladder in cases of ante flexion owing to the mechanical pressure of the fundus on the bladder and interference with its retentive power, but I have seen some few cases of very severe cystitis certainly due to ante flexion, some of which have been at once cured on relief of the uterine displacement.

Chronic constipation is exceedingly common, due to mechanical pressure on the rectum.

Symptoms.—It has been stated in describing the symptoms observed in flexions of the uterus, that one of the most common is pain during locomotion. This symptom, *uterine dyskinesia*, is not peculiar to any special form of uterine flexion, but it is a very noticeable symptom in ante flexion and -version. Peculiar interest attaches to this symptom,

because its intensity in anteflexion is a test of the degree of importance.

It has been my practice always to inquire of patients what it is they complain of, and the following is a part of the reply given in the cases referred to. There are two series of cases, and they are taken from my case-book, the words given being generally those actually used by patients in reply to the interrogation above mentioned.

Cases of Anteflexion or -version of the Uterus—Patients all belonging to the "Fertile" Series.

- | | |
|---|--|
| 1. Constant feeling of bearing-down in walking. | 16. Walking painful. |
| 2. Since a strain, two months ago, not able to walk. | 17. Feels sitting much. |
| 3. Pain on rising from bed in morning. | 18. Complete inability for locomotion. |
| 4. Locomotion difficult. | 19. Inability to walk. |
| 5. Incapable of locomotion. | 20. Pain in walking. |
| 6. Walking power gone last four months. | 21. Cannot walk far without pain. |
| 7. Locomotion very difficult and painful. | 22. Feels dragged. |
| 8. Locomotion painful. | 23. Pain in walking. |
| 9. Walking power small. | 24. Walks badly. |
| 10. Almost incessant unpleasant sensations, a sort of aching only going away when in bed. | 25. Pain right side on motion. |
| 11. Locomotion difficult. | 26. Bearing-down in walking or standing. |
| 12. Walking power small. | 27. Standing difficult from pain in hypogastric region. |
| 13. Strained feeling; cannot stand any time. | 28. One day, six weeks ago, found could only take short steps. |
| 14. Unable to walk from pain in side. | 29. Continuous pain right side, since a week's exertion in shopping. |
| 15. Cannot walk. | 30. Cannot walk. |
| | 31. Discomfort after exertion. |
| | 32. Pain and discomfort following exertion. |
| | 33. Exertion painful. |

Cases of Anteflexion or -version of the Uterus—Patients either Single or, if Married, Sterile.

- | | |
|--|--|
| 1. Walking always produces faintness. | 9. Cannot sit upright from pain in back. |
| 2. Never could walk much. | 10. Pain on locomotion. |
| 3. Can walk only short distance. | 11. Locomotion painful after five minutes. |
| 4. Can only walk very short distance without pain. | 12. Tired easily. |
| 5. Tires readily. | 13. Cannot walk well. |
| 6. Locomotion not practiced. | 14. Walking produces pain. |
| 7. Walking power left her nineteen years ago. | 15. Incapable of locomotion. |
| 8. Incapable of locomotion. | 16. Standing, ever so little, insupportable. |

- | | |
|--|--|
| 17. Cannot walk. | 26. Pain in side increased by exertion. |
| 18. Walks badly. | 27. Very little walking power. |
| 19. Dragging pain in back, especially walking or standing; bearing down. | 28. Great difficulty in locomotion. |
| 20. Peculiar sensation in groins, and a sick feeling on walking. | 29. Severe pain right groin, worse after exertion. |
| 21. Extreme incapacity for movement. | 30. Pain in back increased by walking. |
| 22. Incapacity for locomotion. | 31. Walking fatigues much. |
| 23. Pain and inability to walk. | 32. Cannot walk well. |
| 24. Never could walk well. | 33. Walking power little, formerly good. |
| 25. Cannot walk freely or sit easily. | 34. After walking feels tumbling to pieces. |
| | 35. Cannot walk much. |

The above are extracts from reports of cases observed during three years in private practice, and it does not by any means include all the cases of ante flexion in which the symptom in question occurred. In those cases above referred to it was so noticeable a symptom that the patient generally spontaneously mentioned it on being asked "what she complained of."

In point of fact uterine dyskinesia is the principal symptom in a very large number of cases of ante flexion and version.

Certain positions of the body, even in a state of repose, give rise to great pain and irritation in many cases of ante flexion. Thus, the sitting posture gives great discomfort in many cases, especially bending forward, as in the act of writing, sitting on a low chair, and bending forward particularly. Riding in a carriage in the ordinary position often produces the greatest discomfort; the combination of sitting and being jolted by the motion of the carriage is often very distressing in its effects. Anything calling into action the abdominal muscles may give great pain even when the patient is otherwise quiet; even putting up the arms to dress the hair gives great pain in some cases.

Spontaneous pain is very frequently observed. This pain generally in the sacral region, but very frequently also it is felt in one of the groins. In a few cases it is very severe and constant, but as a rule when the patient is at rest there is little spontaneous pain.

Tenderness of the Uterus to the Touch.—This symptom is severe in some cases. In fact the ante flexed uterus is sometimes so sensitive to the touch that the greatest difficulty is experienced in making a simple examination. It is not,

however, so common to find extreme sensitiveness in ante-flexion as in retroflexion. The tenderness affects the os uteri. In some cases the sensitiveness is not felt at the os uteri so much as within the canal. The internal os uteri is not seldom the seat of a very extreme sensitiveness, the patient screaming out when the extremity of the sound reaches the point in question. There is generally acute congestion of the uterus when general sensitiveness is present, and when the uterine canal is so sensitive the flexion is an acute one and is generally of long standing. In such cases a neurosis has been established at a certain situation, and the spot is usually quite definable, other parts of the uterus being comparatively non-sensitive.

In a few cases we meet with chronic congestion and enlargement, together with ante-flexion and severe sensitiveness which remains so long as the flexion and congestion persist, but disappears for a time under treatment. This recurs from time to time unless means are taken to prevent the descent of the fundus forward. When tenderness to the touch is felt just above the groin on one side, the idea naturally suggests itself that it is due to some quasi-inflammatory condition, and it has frequently been assumed that it arises from ovaritis. I have seen many such cases in which no tenderness of the ovary could be detected by careful examination from within, but where the uterus was found to be ante-flexed and proved to be the source of the pain.

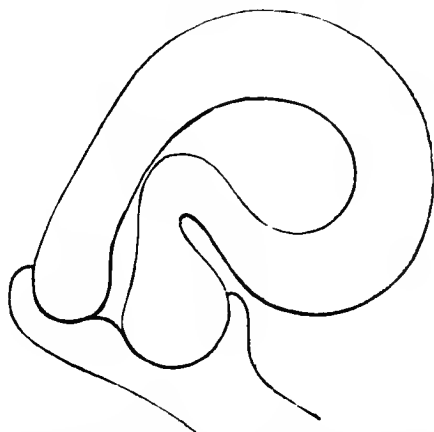
Various abnormal sensations are experienced by patients suffering from ante-flexion or -version not included in the foregoing account. A sensation of weight in the hypogastrium is common, especially in patients who have had children; a bearing-down sensation is not uncommon. A sensation of movement, a sort of rolling-about feeling, within is occasionally described. A feeling of sickness or nausea is very common: this symptom is generally brought on by exertion, or by sitting in a constrained or upright position.

Dysmenorrhœa is a very common symptom. It exists in all degrees of severity. It is very rare indeed to find a case of marked ante-flexion in which menstruation is normal and unattended with pain. Taking cases of dysmenorrhœa in bulk, it will be found that the most common cause is ante-flexion or -version of the uterus. The uterine canal is narrowed by the flexion, the outlet for the uterine secretion is restricted and pain ensues.

Menorrhagia is not uncommon in cases of ante-flexion.

This symptom is sometimes observed in a very marked degree in young women during the first two or three years after commencement of the process. I have seen cases of this latter kind where the loss was almost continuous for a month together, and where the anteflexed condition of the uterus was found to be the cause. It is true such extreme cases are not common. Menorrhagia is more common in cases where the uterine flexion has existed some time, and the uterus has become enlarged, its interior greatly expanded, and the fundus forms a pouch hanging forward

FIG. 86.



in an acutely anteflexed state. (See Fig. 86.) Blood collects in its interior and escapes in large gushes from time to time.

Leucorrhœa is very common. The discharge may be due to the congestion and irritation of the os and cervical canal, but it is not seldom an intra-uterine leucorrhœa, due to retention of secretion within the uterus, to an irritated, vascular condition of the uterine interior (so-called "endometritis"), concomitant with and arising out of cervical obstruction and flexion. The leucorrhœa in the latter case is often observed in form of gushes of sanious fluid. It may even become offensive to the smell. I have seen a case in a single patient who had for some time been subject to an offensive leucorrhœa, due to a flexion of the uterus, and

which entirely disappeared when the flexion was cured. Obstinate long-standing cases of leucorrhœa will sometimes be traced to an unsuspected antelexion.

Amenorrhœa.—This symptom is occasionally met with, the process of menstruation having become entirely and prematurely arrested by the antelexion. In other cases it is observed to be very scanty.

Sterility.—Antelexion is one of the commonest causes of sterility. Fecundation is prevented by mechanical obstruction to the passage of the zoöspersms, or by the altered character of the uterine secretions.

Sterility is primary in many cases, in others it is secondary; that is to say, the patient, having had one or more children, becomes affected with severe antelexion, and thereafter, or until cured of the antelexion, remains sterile.

Abortions.—Antelexion is responsible for a great number of abortions. The patient has a slight antelexion; she becomes pregnant; the uterus does not expand properly owing to the flexion; abortion results. Or the uterus is weak, and an accident or fall produces anteversion, followed by an abortion. But the former is the more common order of events.

Dyspareunia.—Pain in intercourse is a symptom sometimes existing to a great degree of severity. Physical injury is no doubt often inflicted by excesses in regard to intercourse, and the uterus is in some cases actually displaced in consequence. But dyspareunia may exist when there has been no such history of excess in this direction.

Reflex Nervous Symptoms.—In order to avoid unnecessary repetition, these symptoms will be considered in a separate chapter. Reflex nervous symptoms are exceedingly frequent in cases of antelexion or -version, especially sickness and nausea; but as these symptoms are not peculiar to this special variety of uterine flexion it will be best to discuss them from a more general point of view. (See chapters on Association of Pregnancy with Flexions, and on the Vomiting of Pregnancy.)

Symptoms relating to the Bladder.—Frequency of micturition is a very common symptom in cases of antelexion or -version. It is sometimes the principal symptom. In a few cases it is so productive of inconvenience and distress that the patient thinks of nothing else. The necessity for evacuating the contents of the bladder may be as often as every

hour, or even less. It is generally limited to the day, which means that when the patient is in the horizontal position it is not so liable to occur. It is generally worse at the menstrual periods, but I have known cases where it was always better at those times. The symptoms depend for the most part on the pressure of the body of the uterus on the bladder and interference with its due expansion. But there is evidence of cystitis in some cases. When the ante flexion has existed for some time, the bladder either becomes more tolerant of pressure or expands in a new direction, and the irritability may cease.

Pain after micturition is a condition which is met with in some rare cases of ante flexion. A curious case I have in my recollection in which a young lady had been affected for three years with this symptom, which completely destroyed her comfort. It appeared to depend on the contact of the opposite sides of the bladder, due to a severe ante flexion, and it disappeared on treatment of the latter condition.

Symptoms referable to the Rectum.—Constipation of a very obstinate character is observed in many cases of ante flexion or -version. It appears to be a mechanical effect of the altered position of the uterus. In some cases severe straining efforts are quite ineffectual: the uterus being forced down on the floor of the pelvis the rectum is effectually blocked. It is perhaps not at first easy to say why this should occur in some cases to such a marked extent and not at all in others. The explanation may be that when obstruction occurs the cervix uteri happens to be forced down in the centre of the rectum, while it avoids the exact centre in others. I have seen cases in which all kinds of medicine had been tried unavailingly, and in which restoration of the uterus to its proper position was effectual in relieving the constipation.

A case, already mentioned, once came under my notice where the cervix uteri was actually forced by expulsive efforts into the rectum, everting it and, projecting at the rectal aperture, effectually blocked the passage, but I have only seen one such case.

DIAGNOSIS.

On the subject of the diagnosis much has already been said in speaking of the definition of ante flexion and -version.

The diagnosis is easily arrived at in most cases, the pa-

tient being properly placed and the finger introduced in the manner described in a former chapter (see page 27).

The *digital examination* gives the most reliable information, and unless it is thoroughly done no satisfactory notion of the case is obtained.

In this manner the roof of the vagina should be carefully explored and the position of the body of the uterus ascertained—its size, width, distance from the pubic bones, and the elevation of the uterus as a whole in the pelvis.

If the finger can be pushed upward in this position without encountering the resistance of the body of the uterus, as a general rule it may be taken that the uterus is not anteflexed or anteverted. This is a rule to which there are exceptions, as pointed out at page 291. As to recognizing the body of the uterus by the touch, it is a matter of skill, requiring practice to obtain accuracy and certainty. The greatest real difficulty will be found in cases where the roof of the vagina presents a hardened resisting condition, which may turn out to be either anteversion and -flexion *plus* some exudation hardening, or exudation hardening alone. Another cause of difficulty is the retreating or rotation backward of the fundus, which sometimes happens by the mere pressure of the exploring finger. The tumor or resisting mass felt through the vaginal roof is generally recognizable as the body of the uterus by its continuity with the cervix, by its shape, size, etc. The uterine body is often a little to one side of the middle line and not exactly median in position. In some cases the lateral deviation is yet more decided, although it does not amount to lateriflexion. These cases give great trouble in regard to treatment unless this lateral tendency is duly recognized and adequately guarded against.

When the flexion is high up and the uterus not much rotated forward, the ordinary digital exploration may fail to detect it. These are quite exceptional cases, however. When the uterus is very soft and pliable, the exploring finger, unless carefully educated, may fail to recognize its presence through the vaginal roof.

The *double touch* is very useful in difficult cases.

A vaginal examination cannot be always made. In young single women this examination would of course be deferred as long as possible, or, at all events, not undertaken lightly. Information can often be procured by digital examination of the rectum, and an anæsthetic could be employed to ren-

der the examination more easy. As regards the necessity of a local exploration it is impossible to lay down a universal law. Incapacity, of some months' standing, for ordinary exertion should induce taking the case seriously into consideration, and in the first place a rectal examination could be made. If the existence of a marked displacement were thus made out, the course would be comparatively clear; and if none were detected so much the better for the patient.

The use of the *sound* is very necessary in many cases to clear up diagnostic difficulties. The sound should never be used *first*: a digital examination should always precede it, otherwise the body of the uterus may be pushed by it into a different position and the observer may be misled. When the uterus is unduly soft this latter event is very likely to occur; and I know of cases in which marked antelexion has been entirely overlooked, apparently because it was found that the sound could be passed without much difficulty. The fact is, that in some cases the sound unbends the uterus in the act of introduction.

Knowing that there is a tumor anteriorly, antelexion would be suspected, and the point of the sound kept inclined forward as it is being introduced. The introduction may be extremely difficult—generally is, in fact, when the uterus has been some time affected.

I prefer to use the sound almost straight (see representation of shape of sound at page 73). In cases of antelexion the cervix uteri is generally rather far back, often very much so—so that the first difficulty is to get the point of the sound in the os uteri at all. Having inserted it about half an inch, the next procedure is to incline the point of the sound upward and forward, and *at the same time* to draw the uterus as a whole a little toward the symphysis by means of the sound. The result of this usually is that the advance of the sound through the cervical canal is facilitated: the uterus really begins to be straightened. Then, by gradually depressing the handle more and more toward the rectum the sound can be introduced to its full extent. The process should be a slow one, and no force used. It may be taken for granted that if a difficulty is met with, it is due to the point of the sound not being made to assume a proper direction. There are really few cases in which the passage is so much narrowed that the entry of the ordinary sound is impossible. It is almost impos-

sible to introduce a nearly straight sound into a uterus in the third degree of anteflexion and forward rotation, unless the above directions are carried out. When the sound is completely in the uterus the position of the fundus is certainly indicated; but, as already remarked, the flexion may have been got rid of in the mere act of introducing the sound. The sound is very valuable in diagnosing absence of tumors in the anterior wall. Sometimes appearances are very deceptive in this respect: the use of the sound reveals not uncommonly that what was supposed to be a tumor is really nothing more than the third degree of anteflexion.

The ordinary sound cannot always be introduced, a smaller one is sometimes required.

In cases of anteflexion with *posterior* rotation the passage of the sound is confusing at first, for the sound appears to pass backward until one inch and a half perhaps has been inserted, and this may give the notion of existence of retroflexion, but on afterward turning the point sharply upward and forward the true nature of the case is revealed.

The condition of the os uteri gives some information in many cases. In pluriparæ the os is a little open, or may be much open, and the anterior lip is often very much swollen and everted (the contrary to that which happens in retroflexion), and the shape of the os is crescentic, the concavity of the crescent upward.

The position of the cervix varies according to the nature of the flexion. The cervix is generally far back—it may be so far back as to be reached with great difficulty with the finger. But in cases of anteflexion with posterior rotation the os may appear to be in its natural place. In the latter instance, however, it looks upward instead of downward. The mere fact that the cervix is very far back is almost alone sufficient to diagnosticate anteversion.

In some cases which have come under my notice there has evidently been a misunderstanding on the part of the attendant as to the significance of a too posterior position of the cervix. I could mention cases of this kind which have been spoken of as cases of retroversion, simply from inattention to the proper nomenclature of the affection.

CHAPTER XXIII.

ANTEFLEXION AND ANTEVERSION OF THE UTERUS—

(Continued).

TREATMENT.—Important Differentiation of Cases in regard to Cause of the Affection—The Age, the Duration of the Malady—Importance of General Treatment—Illustrations of Method of Treatment necessary in a recent Case—Positional Treatment very Important: How to be carried out—Sitting Position to be avoided—A more Severe Case—Combination of Local and General Treatment—Use of “Cradle” Pessary and Sound—Case in which Uterus is very Rigid and Affection of some standing—Further illustrative Cases of Treatment of Ante flexion after Pregnancy.

Employment of “Incisions” of the Cervix—Former Misconceptions as to Stricture of the Cervical Canal—Utility of the Operation in Cases of Flexions considered—Necessity for Bougies or Stems afterward—The “Stem” Treatment considered—General Conclusions—Difficulties in Absolute Cure of long-standing Cases.

Many cases of anteversion and -flexion can be cured by general treatment alone—that is to say, by a scientific application of a knowledge of the laws of health and of the laws which regulate the motion of the uterus, and without the necessity for local manipulation of the uterus. But when the malady has existed for a long time, and when the uterus has become firm and hard in its distorted shape, there is nothing more difficult than to effect a perfect cure, and all the resources of mechanical dexterity are required to produce a thoroughly satisfactory result.

The general treatment of flexions (already for most part fully described at p. 224) is applicable in cases of ante flexion and -version; that is to say, the diet, the general health, regulation of the bowels, etc., require great care and attention.

Many cases of ante flexion and -version can be successfully treated by general measures. In the first place, however, it is important to distinguish between (*a*) cases where the symptoms have come on suddenly and plainly, as the result of some accident, injury, strain, fall, etc., and (*b*) cases where the approach has been more gradual, and where the case is evidently one of general weakness (*e.g.*, malnutrition), with undue mobility, softness, and slight flexion resulting from even ordinary exertion. These two categories

of cases require a distinction in regard to treatment; for a severely and suddenly displaced uterus is as much a proper object of surgical attention and treatment as a broken limb. General treatment alone would be as a rule applicable in the class *b*, but it might be wholly inappropriate in the class *a*, as defined above.

Then, again, the question of the age of the patient affects the decision as to treatment. Under the age of 18 or 19 general treatment would be preferred to local treatment—and for very sound reasons: one is obvious enough without necessity for mentioning it. Another is that at this age a slight tendency to distortion of the uterus is capable of being corrected by general treatment alone; the disease has not at all events had time, as a rule at least, to become a rooted one. Here, however, the duration of the suffering must be considered, for if there be evidence of existence of the malady for two or three years and the illness and incapacity be considerable, the age should be no bar to a proper remedial treatment.

There are many cases occurring at 17 or 18 in which young women present symptoms clearly indicating slight degrees of anteflexion, and where the symptoms have not existed more than a few months. Such cases are quite amenable to general treatment.

In regard to cases generally, I believe that the *duration* of the malady is on the whole a good guide as to the necessity for local as well as general treatment. When the duration extends over a year or two, general treatment by itself is of little service, though very necessary as an adjunct. Even to this statement there is an exception, for if the uterus happens to remain soft during the whole time it is still comparatively easy to make it assume a more natural form.

The majority of cases require for their treatment a combination of general and local treatment. Above all they require what I have termed a "mechanical" treatment; by which is meant not necessarily the employment of mechanical apparatus or instruments of any kind, but the utilization of the action of the force of gravity. It implies also the utilization of the conclusions expressed at p. 112, in respect to the manner in which flexions cause congestion of the uterus, and of the knowledge that the congestion is to so great an extent a natural consequence of the presence of the flexion, and can be "mechanically" removed by elevating

the fundus uteri, that elevation being effected by the aid of gravity or by some other mechanically acting force.

Dr. Emmet has some remarks in his valuable work which show the great importance he attaches to this principle of treatment. Speaking of the treatment of uterine displacements he says, "Our first aim should be to give tone to the pelvic vessels, and to place the uterus in a position where the circulation will be the least obstructed" (*op. cit.*, p. 144).

I now proceed to illustrate the application of general and local treatment to particular cases.

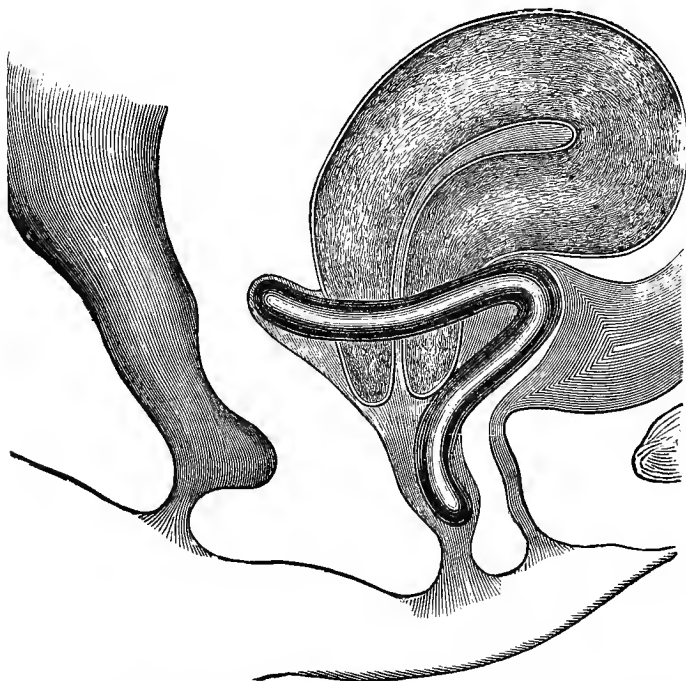
Thus, a young lady of 18 is suffering from a slight ante-flexion. Duration of ill health one year only. In such a case as this a proper treatment would be to restore the nutritive activity by careful feeding, and attend to the general health; in the next place, to insist on the maintenance of the recumbent position during the greater part of the day: the patient to choose a chair with a very sloping back, or to use a sofa; to walk only a short distance at a time; to avoid all exertions, stooping, lifting, carrying, etc.; fresh air as much as possible, baths, friction, etc.

One of the chief points in the above treatment is the positional treatment recommended. Lying down is in fact most important, and after seeing much of the evil results of a misjudged "active-exercise" treatment in such cases as the one mentioned above, I have no hesitation in saying I believe it to be essential to progress in the right direction. The dorsal recumbent position is the best. This may be occasionally modified by placing a pillow under the lower spinal region to elevate the pelvis a little; and the knee-and-elbow position should be employed several times in the day as a further assistance. Some weeks of the above treatment are generally required to produce much effect. Change of air, change of scene, are adjuvants, but it is a great mistake to imagine that they will alone and unaided cure the patient if violent exercise be permitted.

The sitting posture I have always found very unsuitable in cases of anteversion and -flexion—that is to say, sitting in the ordinary position in an upright chair; and for a long time I have found great advantage from advising this to be as much as possible given up in such cases. It is infinitely worse, according to my experience, for a patient to sit at table or at meals for an hour than to go for a long walk. Sitting is, in fact, no rest to the patient, and the flexion is

thereby exaggerated. It will be found that an iron-frame chair with a back capable of being let down to an angle of 45° , whereby the vertebral column is inclined much backward, is excellent for patients requiring proper rest, and it may be exchanged for the sofa when desired.* The amount

FIG. 87.†



of walking to be done depends on circumstances. Twenty minutes twice a day would be suitable in the case above mentioned.

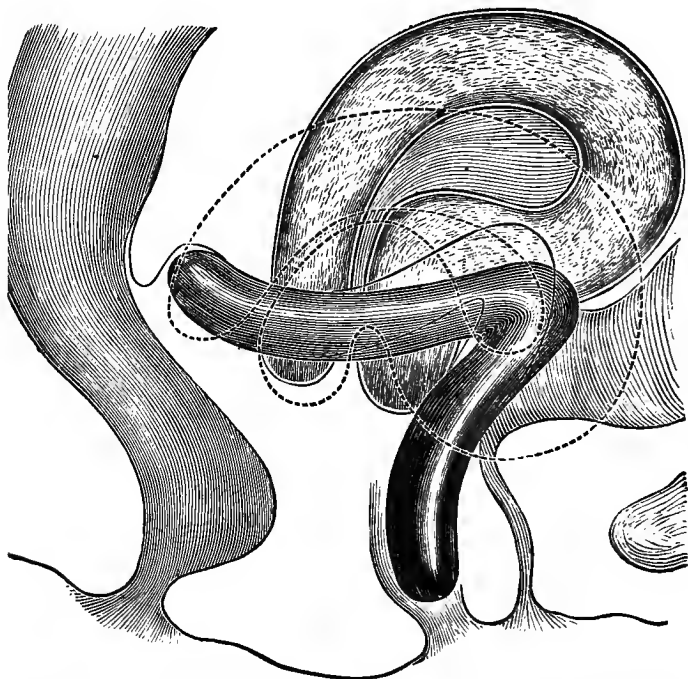
* A chair admirably adapted for this purpose is sold by Williams, 41 New Bond Street.

† Fig. 87 represents the cradle pessary *in situ*. The case represented was one of a nulliparous uterus in a highly congested state, anteflexed to second degree, with much anterior rotation. The pessary is one of small size.

The knee-and-elbow posture is of considerable assistance in such cases. It may be employed for five minutes at a time, five or six times a day.

We may next take a more severe case. The patient is 22 or 23, and has been ill for some three or four years. The

FIG. 88.*



uterus is anteflexed to the second or third degree; there is great weakness; the uterus is soft to the touch, readily replaced by the sound, but returns to its distorted shape on withdrawing the instrument.

* Fig. 88 represents a cradle pessary of large size as in action in a case of anteversion and -version in a patient who had had children; uterus large and congested.

This is a case which will prove most difficult to cure unless some kind of mechanical internal treatment be had recourse to. The recumbent position as described above, but more strictly so for the first few weeks, is required. Reposition of the uterus by the sound every third or fourth day. At the end of ten or fourteen days introduction of a cradle pessary, which, if well fitted and found to work well, may be retained for some weeks. Details as to the pessary to be employed will be given later on. Use of sound to be continued at intervals of a week or so, the object being to straighten the uterine canal more completely. For this purpose the sound is inserted nearly straight. It should then be turned gently round so as to unbend the uterus, and withdrawn at the end of four or five minutes. Conjoint use of the sound and the pessary may be found difficult to carry out without withdrawal of pessary, and in some cases it may be better to dispense with the sound for some weeks at first. But the pessary should be used continuously for the most part, or, at all events, if it be removed for a day or two the patient must not be allowed to move from the horizontal position, otherwise ground gained may be lost, for the action of a well-acting pessary is like that of a splint, keeping up a continuous rectifying action and preventing movement of the fundus in the wrong direction.

After a period of a month or six weeks the patient may, perhaps, be allowed to move about the room a little, but not to sit upright, and a walk out of doors may be permitted at the end of two months. Carriage exercise, though good in one way, is very bad in another, for unless the recumbent position be maintained the jolting of the carriage is most distressing to the patient; a little walking is infinitely preferable.

The further treatment will consist in the use of the pessary, changed from time to time, if necessary, for one more suitable to the altered condition of the uterus, or to allow of occasional use of the sound; and it is probable that in such a case as that described it will be necessary to continue the use of the pessary and avoidance of the upright sitting posture for perhaps a year. But after the first two or three months, or even earlier, the patient may be so much better as practically not to be an invalid.

In cases where the uterus is very soft, but the case otherwise as represented above, the use of the sound would be less necessary. More care would be required in the nutri-

tional direction, and a year would be probably not enough to produce a complete cure: not because it is so difficult to keep the uterus in place and in shape as it is to give it the strength to retain its place and shape unaided.

We may next take a case still more severe. The patient is 27 years old; there is anteflexion to third degree, anterior rotation to third degree, uterus very low down in the pelvis, os uteri almost touching the coccyx, space behind symphysis filled by the enlarged uterus, the uterus itself hard to the touch, introduction of sound difficult, unbending of uterus difficult and painful, illness six or seven years in duration.

In such a case the elevation of the uterus may be difficult, so also the unbending, owing to fixation and hypertrophy of the organ. The best plan to adopt in such a case would be to keep the patient recumbent on the back for two or three weeks, using daily copious injections of quite hot water and employing pressure on the fundus by means of the finger occasionally, aiding the elevation also by the knee-and-elbow posture from time to time. After a few days the treatment by the sound might be commenced, and soon a cradle pessary might be used. But under such circumstances there is a greater risk of creating irritation by the conjoint use of the sound and the pessary, and the treatment must be modified accordingly. Moreover, we cannot expect to advance rapidly in the first part of the treatment, for the hardness and fixity of the uterus are against us. Still, by the aid of rest, hot water, and slight continuous pressure upward, distinct advance is gained, and after a few weeks more rapid progress is possible. The steel dilating instrument described at page 232 (Fig. 48) is a valuable aid in such a case as the above, for the uterus can be straightened and at the same time gently dilated by its means, and the two processes of straightening and gradual dilatation are a mutual help in the rectifying treatment.

The cases just mentioned have been given in outline only, and with the view of setting forth the general method of treatment which I have found most serviceable and successful in the large majority of cases, details as to treatment of the various complications frequently present being postponed for separate discussion. Necessarily hardly two cases are alike, and each case has to be treated on its merits; and the outline given above, therefore, is to be taken as

representing the idea of principles of treatment which has seemed to me applicable to very many cases. With slight differences the principles in question may be extended to other cases not included in the above series.

Take, for instance, the case of a patient who suffers from anteflexion dating from the birth of a child a year ago. In such a case, a vaginal pessary for a few months, combined with avoidance of the sitting position for a month or so, will probably effect a cure.

Similarly an anteflexion dating from three years since the birth of a child. Here a pessary will probably not be sufficient—the use of the sound will be required, and a prolonged rest may be essential to produce the necessary change in the shape of the uterus. In such a case in all probability there would be considerable hypertrophy of the whole uterus, and this would have to be treated. Without a long maintenance of the horizontal position no progress could be made, because the patient would not bear the pressure of the pessary. There would very probably be other complications also requiring attention.

Cases of Anteflexion with Posterior Rotation.—In these cases great difficulty is found in the treatment. When the uterine tissues are soft a well-adapted cradle pessary answers very well in some cases. A stem pessary may be found suitable where the cradle does not fulfil the necessary indications. When the uterus has become hardened and a long time has elapsed, a continuous dilatation treatment, associated with use of a cradle, will be found best, according to my experience, but it may be necessary afterward to use a stem pessary.

It may be well in the next place to mention cases in which care and caution are requisite in application of the treatment by means of the sound or dilator, either alone or along with vaginal pessaries. Where the flexion is of very long standing (say over seven years), and the uterus is hard and rigid, and the patient over 35 years old, there is a danger of setting up irritation by the repeated use of the sound or a metallic dilator, more especially if a vaginal pessary be used at the same time. Indeed, I have known cases of this kind in which even the sound alone could not be used at all without risk of inducing an attack of pelvic cellulitis. These considerations lead to the necessity for care and caution in attempting to extend the principles above mentioned to cases of long-standing flexion with a hard uterus.

In view of the facts just mentioned, it may fairly be questioned whether it is not preferable to employ some other method of treatment than those above described in cases of long-standing flexion—that is to say, either incision, or dilatation by means of tents, and subsequent use of the stem treatment, in order to obviate the difficulties encountered in these exceptional cases.

There are two other methods of treatment of ante flexion to be described—(1) *Incision of the cervical canal*, and (2) *the use of the uterine stem*.

These methods of treatment are, according to my experience and belief, inferior in effect and general applicability to the more simple methods already described. On this subject, however, opinions differ. I have not, at all events of late years, employed these methods to any considerable extent.

Before alluding further to these other methods of treatment it may be well to point out the position of these operations in regard to the pathology of the uterus.

Incision of the cervical canal had for its primary object the relief of dysmenorrhœa, or the cure of sterility. And it was not at that time understood, at all events to the extent it now is, that the supposed stricture of the cervix uteri which the incision was to open was in the very great majority of cases due to acute flexion of the uterus. And whereas the question would have been asked some few years ago, Is such an operation good for the cure of dysmenorrhœa?—the question now would more properly be, Is the operation capable of curing the acute flexion which is the cause of the dysmenorrhœa or sterility, or both?

It by no means follows because the operation was founded on a misconception that it was really a bad operation; and it is well known that in many cases the operation was temporarily successful, while in a few its success was more permanent. But in estimating its value we must, as I believe, regard it from a different point of view to the original one.

Incision of the Uterine Canal as a Remedy for Chronic Ante flexion of the Uterus.—The operation consists in incising the uterine canal from within, generally on the two opposite sides—the incision being made so as to affect the part of the cervical canal at and below the internal os, and being carried downward to the external os uteri in such a manner that the entrance to the uterus is rendered somewhat fun-

nel-shaped. The depth of the incision is such as to allow of the free passage of a large sound into the uterus. The cervical canal and the internal os uteri are then plugged carefully with cotton or lint saturated with an antiseptic or a styptic such as perchloride of iron. The plug is retained for two or three days, and then a solid plug or stem is inserted so as to maintain the degree of opening obtained by the operation.

Such is the operation in its general outline, though the details are somewhat differently carried out by different operators.

The permanent value of the operation above described depends on the efficiency of the subsequent treatment. It appears that in most cases the uterus returns to its previous condition, or nearly so, unless the subsequent treatment is continued for a very considerable time. The edges of the incision unite, the flexion returns, and after two or three months have elapsed the effect of the operation seems to have passed off. At least this is liable to be the case, if the flexion is of long standing—five or seven years or upward. If, therefore, a long-standing flexion be thus treated, either a stem pessary should be worn continuously for many months after, or a combination of occasional bougie treatment, with use of a vaginal pessary, would be necessary. It seems to me that in very obstinate long-standing cases of anteflexion, with a hard uterus, the incision treatment well followed up is capable of effecting more than can be effected in any other way. But at the same time, according to my experience, the cases in which the treatment is really required are few in number.

With reference to the danger of the incision plan of treatment it cannot be said that it is devoid of danger; and seeing that it is an operation for which it could be rarely said there is an absolute necessity, the possibility of a fatal result should certainly be duly considered in undertaking it.

Details regarding the incision treatment will be given separately later on.

I propose in the next place to speak of the *stem treatment* for the cure of anteflexion.

I have in the course of practice had a considerable experience of stems, and some few years ago employed them frequently. In the last edition of this work I described an apparatus for the purpose which has been extensively employed since, either as originally described by myself or

with certain slight modifications. But I have not employed the stem treatment in a large number of cases of late years, having preferred for most cases a conjoined treatment by vaginal pessaries and use of the sound or dilator.

The stem treatment is applicable in cases of ante flexion as a means of retaining the canal (*a*) pervious and (*b*) straight. The advantage gained is the certainty of these two objects being secured so long as the stem is worn. When the flexion is not of long standing the use of a well-adjusted stem for a few months will very possibly result in a satisfactory cure: provided that it excites no intercurrent irritative attack, that the general treatment of the patient is judicious, and steps be taken to nourish and strengthen the body generally. In such comparatively simple cases, however, equally beneficial results without the same liability to production of irritative effects can be procured, according to my experience, by other more simple measures.

Taking cases of a more severe type, where the flexion has been of longer duration, the stem treatment offers in such cases advantages which will probably decide many gynaecologists, at all events occasionally, to employ them. In reference to the dangers of the stem treatment much has been said, some authorities going so far as to say they ought to be abolished from practice. Undoubtedly fatal results have followed their employment, and it is difficult to say how far these fatal results have occurred from want of care or from an inherent dangerous tendency of the treatment.

An interesting paper on the subject of the use of stems was published in the "American Journal of Obstetrics," in 1877, by Dr. Ely van de Warker, and a discussion followed * which may be studied with advantage. It is there shown that opinion in the United States differs very much on the advisability of the stem treatment. Dr. Van de Warker gives it as his opinion that the treatment is capable of being employed under conditions which govern every careful surgeon in the use of any other mechanical device: that the contra-indications are recent pelvic inflammation, acute or chronic peritonitis, extreme hyperæsthesia of the uterus, intolerance of its cavity; that the stem should not be continuously worn if the pressure is great from the flexion; that the stem should be so short as not to touch the fundus;

* "American Journal of Obstetrics," 10, p. 694.

that the support should be in the vagina and movable, non-corrosive, and that it should be managed by an expert..

I give the above *résumé* of the paper because it appears to me to be a fair statement of the question. In this country the stem treatment is strongly advocated by some able gynæcologists, Dr. Routh, Dr. Granville Bantock, Dr. Wynn Williams, Dr. Thomas Savage of Birmingham, and others.

Dr. Routh insists on the necessity for preparatory treatment and blood-letting, in some cases use of tents, in some use of the hysterotome. Dr. Bantock would recommend at first use of sound, tent, or bougie, but if the flexion be acute he would divide cervix by incision and use the stem afterward. Dr. Playfair states that he uses stems in exceptional cases only and when constant supervision can be exercised. Dr. Wynn Williams and Dr. Thomas Savage state that they have very largely employed the stem treatment and without any bad effect resulting. For myself I can say that, having employed the stem treatment in many cases of antelexion, I have never had a fatal result.

Some further remarks appear to be required as to the action and value of the stem treatment in obstinate cases of antelexion. Care should always be taken to ensure that the fundus of the uterus be kept in its proper position. For this reason the stem must have a vaginal frame-work on which to rest and to which it shall be so far fixed as to retain the long axis of the uterus in its proper position, and so as to prevent rotation of the fundus forward. Unless this object is secured the stem treatment is, in my opinion, likely to turn out a failure.

Another point: inasmuch as the stem keeps the uterine canal straight, and continuously so, the compression of the tissues of the cervix which is the result of long-continued acute flexion, is put an end to; the atrophy has a chance of being remedied. The efficacy of treatment by the sound in this respect may be compared with that resulting from the use of the stem as follows:

The object we have in view is to permanently alter the shape of the cervical canal, which in long-standing cases is liable to be much atrophied on one side. By the repeated use of the sound we are able to bend the canal in the opposite direction to a slight extent. The frequent repetition of this process (aided by the vaginal pessary) in time produces a considerable effect, because by means of the sound we can

do more than actually straighten the canal. Thus, by frequently slightly retroflexing the uterus we in time cure the antelexion. This is undoubtedly an advantage which the sound treatment possesses but which the stem does not. On the other hand, the stem, when once introduced and found to suit, can be worn for a long time during which the uterus is always kept straight, and repeated manual treatment is not required.

The cases which present most difficulty in the way of permanent rectification are those of sterile patients with an elongated cervix of a tapering character, but very much bent upward, so that the os looks directly upward. It is held by some gynæcologists that this is a congenital condition. Such is not my impression. At all events the cure of these cases is confessedly difficult. A short way of dealing with these cases is that originated by Dr. Marion Sims, consisting of cutting along the middle line of the cervix on its posterior wall and thus opening the cervical canal, in effect shortening the cervical canal to a considerable extent. This practice is advocated also by Dr. Emmet, and has been practiced by others, but so far as can be gathered the operation has not been by any means always successful as a cure for the sterility which has been the principal reason for undertaking it.

Speaking generally in reference to the treatment of cases of antelexion it must be understood that *when the malady has existed for some years* a persistent treatment extending over a considerable time is required to obtain a complete cure. If the patient becomes pregnant, that is a considerable help, for unless a miscarriage occurs (which has to be prevented) the uterus in its expansion and growth is favorably affected by the pregnancy. But after it is over a recurrence has to be guarded against. On the other hand, if pregnancy does not occur, the use of a vaginal pessary is required in some cases for a year or two, or even longer, to maintain the effect of the treatment. It is impossible to cure a long-standing case in a few months so far that the patient can dispense with some internal support. In process of time, however, the uterus can be consolidated in its improved shape and position; but this is necessarily a work of time, and it is unreasonable to expect it to be otherwise.

In a certain number of chronic long-standing cases of antelexion it is not advisable to initiate local treatment at

allowing to the length of time required for treatment, or other reasons. In some it is necessary to be satisfied with sustaining the uterus a little so as to prevent further descent or flexion. After a gentle treatment of the latter kind it is sometimes found practicable to go on with more radical measures.

CHAPTER XXIV.

ANTEFLEXION AND ANTEVERSION OF THE UTERUS— (*Continuea*).

TREATMENT—(*Continued*).

PESSARIES FOR THE TREATMENT OF ANTEFLEXION AND ANTEVERSION.—The Author's "Cradle" Pessary—Principle of its Action—Two Varieties, the "Bar Cradle" and "Crutch Cradle"—Various Sizes required—Various Materials—Modification in Use resembling Gehrung's Pessary—Introduction and Removal of the Cradle Pessary—Precautions in regard to its Use—Dr. Gaillard Thomas's Pessaries—Other Pessaries: Playfair's, Galabin's, Fancourt-Barnes's, Galton's—The Air-ball Pessary.

THE CRADLE PESSARY.

The "cradle pessary," as it is now termed, was exhibited by me on May 1, 1867, to the Obstetrical Society of London, and is figured in vol. ix. of the "Obstetrical Transactions." The instrument had been used by me for three or four years previously and I have now employed it, slightly altered from the original shape, for upward of fifteen years, in the treatment of anteversion and anteflexion.

The cradle pessary acts on the following principle: It rests on the vaginal floor at two points—one near the entrance, one high up behind the cervix uteri—and with this basis of support it makes pressure upward and a little forward through the vaginal roof, about midway between the cervix uteri and the symphysis pubis.

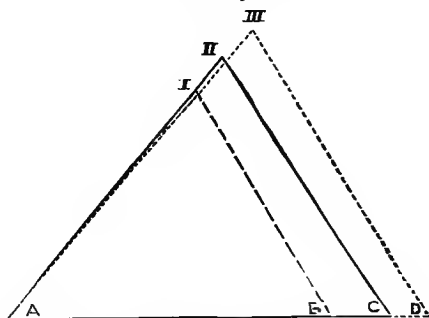
The general outline of the cradle pessary, looked at sideways, is that of a triangle without a base. The triangle has unequal sides, and experience has shown that in all cases this triangle must have sides whose measurements have a certain definite relation one to the other.

The line III A is a little longer than III D.

In the instrument as first exhibited the measurements were a little different, but I have found by long experience the above relation of the sides of the triangle to be the correct one. If a smaller instrument be used a similar proportion between the measurements of the sides must be preserved. I have thought it necessary to give very precise details, because many patterns of cradle pessaries are sold, not at all agreeing either with the original shape or with that now given, and which have not consequently been found satisfactory by many who have employed them.

Most of the instruments sold as "cradle" pessaries have the grave defect of being too long at the base—*i.e.*, the distance A to D (see Fig. 89) is too great—the result being to

FIG. 89.*



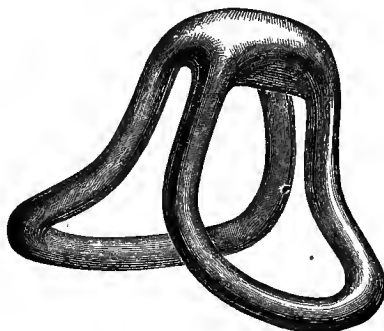
distend the vaginal canal too much. The part which rests on the vaginal floor (A to D) should not exceed in length that shown below for the largest size. In the smaller sizes it should be a little less. A second defect in instruments sold is the want of sufficient elevation of the apex of the triangle, and a third is the placing of the apex of the triangle exactly midway over the base line A D. The proper triangle is not an equilateral triangle and the two lines A III, D III, should be of unequal length.

I now employ two forms of the instrument, one of which is represented in Fig. 90, and the other in Fig. 91. The former may be described as a cradle with a bar, the other as a cradle with crutches, one on each side;

* In Fig. 89 are shown three triangles. The largest indicates the size of the largest-sized cradle pessary; the others are smaller. The base line is that of the vaginal floor.

the terms "bar cradle" and "crutch cradle" are convenient distinctive appellations. They require to be of various sizes. Three sizes are generally applicable—

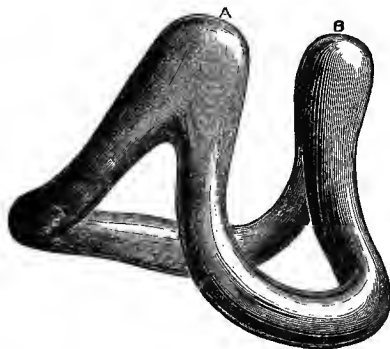
FIG. 90.*



No. 1 the smallest, No. 2, and No. 3 the largest. The above figures represent the No. 3 size (largest).

The action of the cradle pessary is in part a direct action;

FIG. 91.†



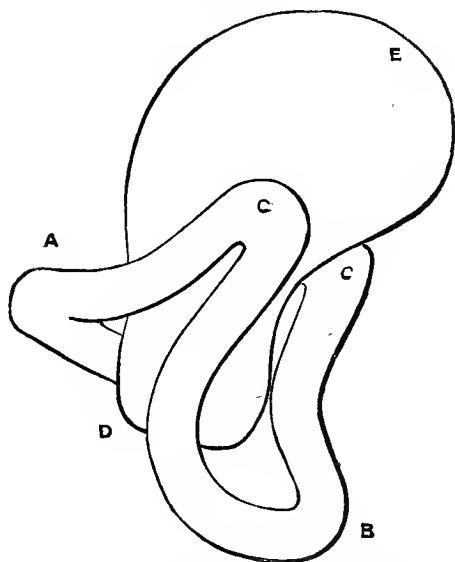
exerting pressure upward and a little in front of the fundus uteri it tends to elevate the fundus to its proper position. Moreover, by occupying a certain space it prevents occu-

* Fig. 90 represents a large size bar cradle pessary.

† Fig. 91 shows a large size crutch cradle pessary.

pancy of that space by the fundus. In addition to this it has a lever action—it draws the cervix forward, and has therefore a tendency to produce posterior rotation of the whole uterus. The part of the pessary making pressure is the “bar” or “crutch,” as the case may be. Sometimes one variety answers best, sometimes the other. The crutch pessary is scientifically the superior instrument, as it prevents lateral movement of the fundus. The present construction differs slightly from that first introduced and

FIG. 92.*



represented in the 1872 edition of this work in the relative position of the apex of the triangle. The apex is now a little further forward, and it has a better and more perfect action when in position.

In the crutch variety of the cradle pessary, it is highly important that the surfaces of the crutch part, which is in

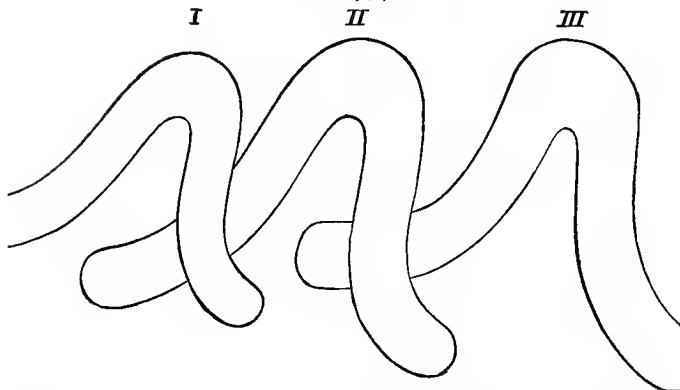
* Fig. 92 represents outline of cradle and uterus to show its action. This drawing is different from the one in the last edition of this work; the large ring should be, as it is here shown, posterior to the cervix. A is the posterior or large ring of the pessary, B is the anterior or smaller ring.

front of the uterus, should be opened out so as to present a concave surface, against which the uterine body rests.

FIG. 93.*



FIG. 94.†



This part of the construction of the crutch pessary is not evident on a lateral view. It can only be seen on looking

* Fig. 93 shows a large size crutch cradle as seen from above.

† Fig. 94 represents, in a profile view, the three sizes of the cradle pessary marked respectively I, II, and III, such as may be readily made from various sized rings bent into the crutch shape.

at the pessary from above. The annexed drawing (Fig. 92) will render this explanation more intelligible.

In practice it is found that the space between the two crutches A and B has sometimes to be a little increased

FIG. 95.*

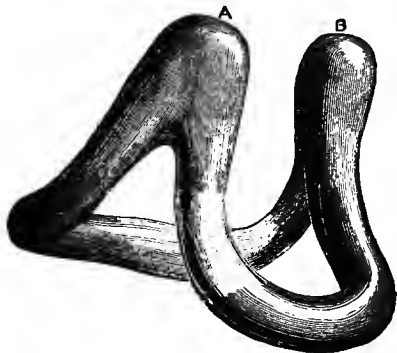


FIG. 96.*



from that shown in the typical instrument. And it is very necessary that the surface of the crutches be well rounded off, otherwise the pressure is not well borne.

As regards the size suitable to different cases, it is found that in patients who have had children, a large size (No. 3)

* Fig. 95 represents a medium size No. 2 crutch cradle; Fig. 96 a full size No. 3 crutch cradle.

generally suits best, while in others a smaller size is required. Again, the width of the instrument as a whole sometimes requires to be a little different from the typical

FIG. 97.*

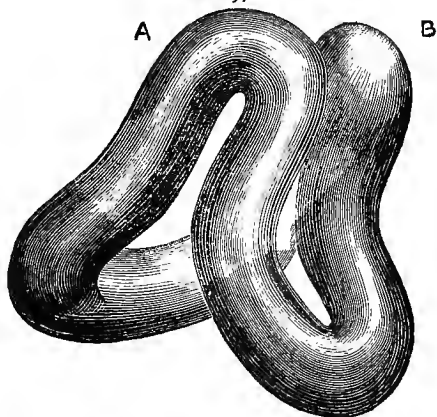


FIG. 98.†



measurement. In single women a narrow cradle pessary is also essential.

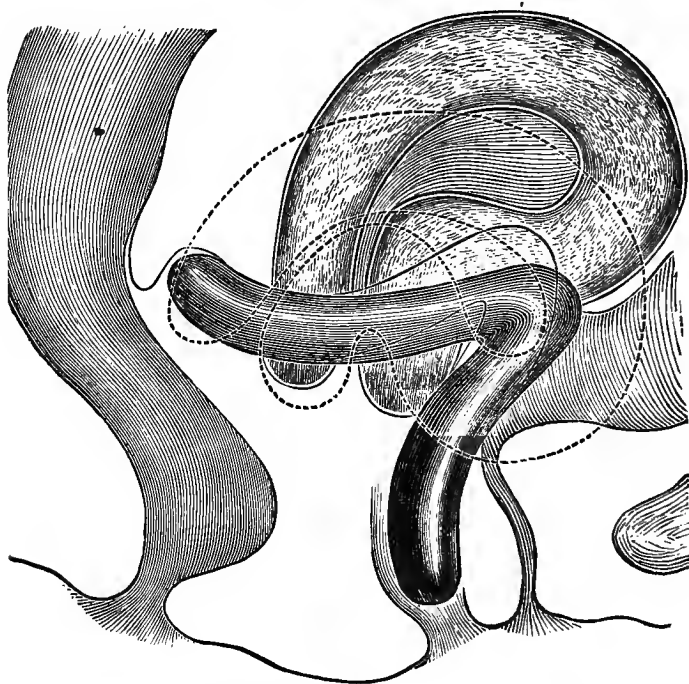
The cradle pessary is made of various materials ; the best

* Fig. 97 represents an extra thick No. 3 size spring cradle pessary.

† Fig. 98 is another view of the same pessary.

material for both the bar and crutch varieties is ebonite. Messrs. Coxeter, of Grafton Street, have been at some trouble in making these two varieties of the cradle pessary

FIG. 99.*



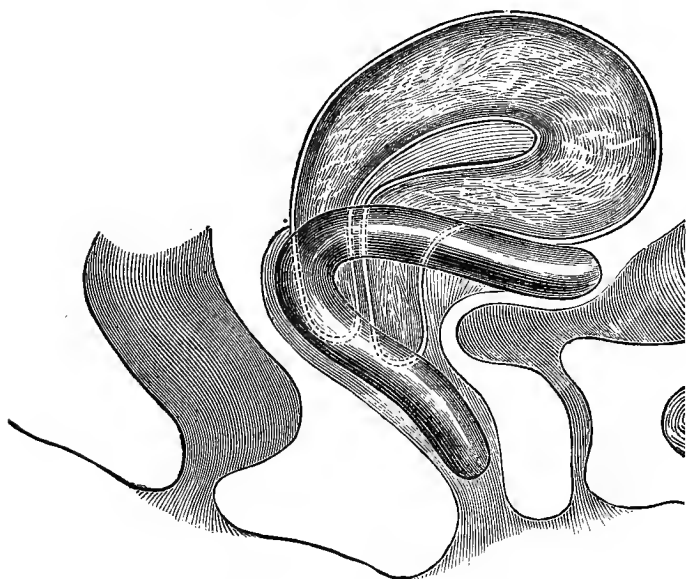
in ebonite according to my directions, and now keep them in stock. The crutch variety can be constructed extemporaneously of copper wire rings covered with india-rubber, and this admits of easy modification of the size or shape. Ebonite is a very cleanly material, though its hardness renders it in some ways inferior to the soft rubber-covered

* Fig. 99 shows a large (No. 3) size spring cradle pessary in action.

pessary. I have employed cradle pessaries of all these varieties of material in very many cases during several years, and find that the great secret of their successful employment is the accurate fitting of the pessary, and the preservation of the normal relational measurements of the triangle to which attention has been already drawn.

There are certain exceptional cases in which a larger

FIG. 100.*



cradle pessary than No. 3 may be required, but they are really exceptional.

Spring Cradle Pessaries.—I have found that cradle pessaries made of German silver covered with india-rubber are sometimes preferable to others. For cases where greater facility in introduction is required they are very useful. Messrs. Coxeter, Messrs. Meyer & Meltzer, and Mr. Russell have made these pessaries in conformity with my in-

* Fig. 100 exhibits a special mode of using the cradle pessary. The pessary is a little flattened to adapt it to this particular object.

structions. These pessaries are to a certain extent compressible and are thus more easily introduced, and retain their shape after introduction. Fig. 99 represents a No. 3 cradle pessary made in this way. The particular pessary here shown is most valuable for cases where the uterus is large and heavy (as in cases of ante flexion with a congested hypertrophied uterus), and it is made purposely a little thicker than is required for ordinary cases. Nos. 1 and 2, made in this material, are of course smaller than the one here shown.

Another Way of using the Cradle Pessary.—In some few cases I have found that the cradle pessary acts very well when it is rotated backward so as to place the part which is ordinarily in front of the body of the uterus behind the os. The plan acts beneficially in certain cases, but generally the tilting action of the pessary backward is too strong and may convert the anteversion even into a retroversion. Fig. 100 shows a cradle pessary a little flattened, so as to lie better on the vaginal floor, and acting as above described.

Gehrun's pessary for ante flexion is in principle very like the one above described. I append Gehrun's drawing of his pessary, from which it will be evident that the two act alike. I had occasionally employed the modification above described some time before the publication of Gehrun's pessary.

Introduction of the Ordinary Cradle Pessary.—The introduction of the cradle pessary is not very easy unless certain points are attended to. The large ring is to be introduced first, the bar or crutch being at this time close to the urethral orifice. When the large ring is thoroughly engaged in the vaginal aperture, pressure must be made, not upon the ring, but upon the bar or crutch part which is close to the urethra, and this part must be pushed inward under the urethra, giving the instrument a sort of rotation backward. This little manœuvre, when properly performed, projects the cradle pessary completely into the vagina, and its further introduction is a matter of great ease, as it takes its proper position certainly and readily. Unless these precautions are observed, the introduction may be very difficult. It is best to place the patient on the side with the knees well drawn up, and a good deal of fresh lard or cold cream should be used to facilitate the operation. In unmarried patients requiring the use of the in-

strument the difficulties of introducing the pessary may render necessary the aid of an anæsthetic.

In cases where any considerable degree of resistance is experienced in elevating the uterus the use of the cradle pessary must be accompanied with precautions in regard to the position of the patient. The horizontal position is quite essential at first. The sitting posture is generally more uncomfortable during the first few weeks of wearing the cradle pessary than it was before, and must be generally avoided for a time at least. Although the instrument really presses on the bladder it rarely produces any irrita-

FIG. 101.*



tion of this organ. The instrument sometimes presses a little unduly on the rectum if there be too much standing or sitting, and the action of the bowels is frequently a little hindered by its presence. To obviate this occasional difficulty a daily enema is the most appropriate remedy. The ebonite instrument, when well fitted and working well, may be worn for months without difficulty of any kind, but, until it has done its work, will of course require to have its action supervised and regulated. But when a cradle pessary made of a hard material has been worn for some

* Fig. 101 is Gehrung's drawing of his anteflexion pessary.

months it should be removed and a soft cradle used for a time. When the soft india-rubber varieties are employed, more frequent changes and daily injections with a little antiseptic fluid may be required, especially just after the periods are over.

The removal of the cradle pessary may be attended with difficulty unless certain precautions are employed. The pessary must be drawn backward toward the anal aperture as well as downward, and it will be found easier to remove it by hooking the forefinger into the pessary behind and not in front of it.

Various other pessaries have been employed in the treatment of anteversion and -flexion. Some of these will now be mentioned.

FIG. 102.*

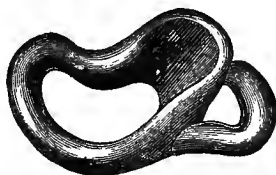
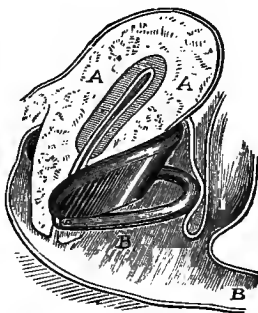


FIG. 103.†



Dr. Gaillard Thomas employs two or three pessaries of his own design. The principle adopted by him is to use a Hodge-shaped pessary as a foundation, and a bar in form of an arch is carried from this in front of the cervix. This arch moves on hinges, so that it can be inserted more readily.

Some of Dr. Thomas's instruments are represented in the annexed figures taken from the last (5th) edition of his work.

Dr. Thomas has also now an instrument which is a combination of the stem with a vaginal pessary. It differs

* Fig. 102 shows one form of Thomas's pessary. It is in ebonite in a single piece.

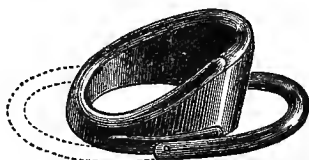
† Fig. 103 shows a hinged instrument of Thomas's for anteversion.

little from the shape of the other vaginal pessary, but there is a sort of cup which supports a stem, the stem being of course placed in the uterus; a piece of thread is attached to the stem to facilitate its withdrawal after removal of the vaginal part of the pessary.

There are other vaginal pessaries which have been invented for the treatment of anteversion and anteflexion, acting by pressure through the vaginal roof—viz., those of Dr. Playfair, Dr. Galabin, and Dr. Fancourt-Barnes.

Hitherto, instruments have been described acting wholly within the vaginal canal; other instruments have been employed acting from without. As a rule, certainly, any instrument of the latter kind is objectionable to the patient and requires constant attention. Dr. Thomas describes a modification of Cutter's pessary for retroflexion, but shaped so that the pressure is applied in front of the uterus, and fixed in a similar way by means of a tape passing from the stem to the waist behind. Instruments have

FIG. 104.*



been employed by others, the fixed point for which is obtained by attaching a stem to a pad in front kept in place by a pelvic band passing round the pelvis. Dr. Galton exhibited such an instrument at the Obstetrical Society of London in 1874. The principle of this latter instrument is similar to that of an instrument before employed for prolapsus of the uterus, and in some very rebellious cases there is no doubt that such an instrument would be found very useful.

The Air-ball Pessary.—Some few years ago I was in the habit of employing an air-ball pessary rather extensively in the treatment of anteflexion, and I still use it in a few cases where the cradle pessary is for various reasons not found convenient.

The air-ball pessary is a very efficient instrument up to a

* Thomas anteflexion pessary, modified by Mundé, with hinges sunk.

certain point, and in cases where the uterus is very heavy or large, or very sensitive, it is very serviceable. The instrument is an india-rubber ball made *perfectly round*, and it has a small tube attached, by means of which it is inflated after introduction. The tube has a stop-cock; and a brass air syringe which fits the stop-cock is the means of introducing the air. The apparatus is well made by Messrs. Meyer & Meltzer. The pessary is made in various sizes. The average size required for married patients is a ball one inch and three quarters in diameter when not distended. After insertion this is inflated until its diameter is two inches. This precise amount of dilatation can be ensured by introducing it empty, having ascertained previously how many strokes of the piston of the syringe are required to produce the necessary degree of distension.

It is extremely important that the ball should be quite round, and that the distension should not go beyond what is required. A two-inch diameter ball sustains the uterus in the proper manner, but if larger it displaces it as a whole backward.

One drawback to the air pessary is the presence of the tube externally. This should be fastened in front to a piece of bandage tied round the waist. Another is the liability of the stop-cock to get out of order, when the air of course escapes. But when properly managed it is a very useful instrument, and has the advantage that it can be readily inserted and removed by the patient herself. Careful instructions should be given in order that the pessary may continue to act properly.

[Of all pessaries the inflated air bag above described is the least satisfactory. It is seldom used in this country, at least by men who understand the principles that should guide us in the treatment of uterine displacements.]

CHAPTER XXV.

LATERIFLEXION, LATERAL DISPLACEMENT AND ALTERNATING ANTE- AND RETROFLEXION OF THE UTERUS.

LATERIFLEXION OF THE UTERUS.—Treatment.

ALTERNATING ANTE- AND RETROFLEXION.—Nature of these Cases—Condition of the Tissues of the Uterus—Treatment, General and Mechanical.

LATERIFLEXION OF THE UTERUS.

As a general rule flexion of the uterus is very decidedly either forward or backward, although it is common enough to find that the inclination of the uterus is a little to one side, the flexion not being exactly in the middle line. But in some few cases it is found that the flexion is very markedly in a lateral direction. I find, on referring to my case-books, that during six years the uterus was in a condition of decided lateriflexion in three cases—not a large number, and showing that the condition is a rare one. The relation of the uterus to the broad ligaments, and its lateral fixation by these structures, prevents lateral displacement.

Of the three cases referred to, one was a single lady, aged 24, who had been thrown from a horse a year before applying for advice, since which she had been subject to considerable pain and incapacity for locomotion. In the other two cases there was no history of a severe accident: one patient was 46 years of age, and the displacement was of long standing; the other was only 18, and had walked excessively since her marriage, two years previously.

I have seen other cases in which the uterus was ante-flexed and distinctly inclined to one side; but these are not included in the above category.

The diagnosis of these cases can only be certainly made by means of the sound. [We rarely use the sound for this purpose. The bi-manual method is alone sufficient.]

Treatment.—The treatment I have found successful consists in the employment of the sound, whereby the uterus is replaced, and a careful positional treatment. If the uterus is inclined to the left side the patient should lie principally on the right. The horizontal position is of

course requisite. As regards the use of pessaries in such cases, it is not easy to adjust one which shall carry out the indications. When the uterus is decidedly in a state of lateriversion, with slight inclination forward, a cradle pessary can be fitted so as to meet the difficulty. For this purpose the crutch cradle pessary should be so bent that the crutch projects more backward than usual on the side to which the uterus inclines. The stem pessary would undoubtedly be the best instrument to employ when the uterus is very decidedly bent to one side.

LATERAL DISPLACEMENT OF THE UTERUS.

I have seen a few cases in which the uterus without being flexed was displaced very decidedly from its median position in the pelvis, this condition being the result of an accident or fall and giving rise to protracted and obscure suffering.

Thus in one case a young lady fell down stairs, broke her arm, and was laid up for some time with it, but when she attempted to walk found it difficult and painful to do so, and she became affected also with "hysterical" symptoms. The uterus was found packed away, as it were, in the left posterior corner of the pelvis, where it had evidently lain since the injury. By positional treatment the uterus was brought to the middle of the pelvis with satisfactory results.

Another patient had sustained a severe fall on the floor from sitting down when there was no chair. Obstinate pain in the back resulted, and it was subsequently found that the uterus was driven backward close to the sacrum, and a little to one side.

ALTERNATING ANTE- AND RETROFLEXION.

A very important and interesting class of cases is that in which the flexion alternates backward and forward.

These cases are by no means rare.

I first became acquainted with this alternating variety of flexion eight years ago while attending a case which proved to be one of this kind and which was under observation for a considerable time. It was very difficult to cure, and the facts observed from time to time in connection with it fur-

nished me with information which has been found very valuable in other similar cases.

These alternating cases are typical cases of the "soft" uterus. This softness is the result of malnutrition. The case above alluded to was that of a lady threatened with phthisis, and in a low state of nutrition generally. There was very intense uterine dyskinesia; complete inability to walk more than a few yards. The uterus was found retroflexed. Treatment for this retroflexion was for a time successful, but it afterward failed and it was then found that the uterus was anteфлекed. Again, a fresh adjustment was made, but it was found that the slightest pressure in front produced retroflexion, while the slightest pressure behind the uterus produced anteфлекion. The uterus was so weak that it had no power to keep straight. After observing these oscillations long enough to be aware of the true nature of the case, a peculiar shaped pessary was applied which had the effect of simultaneously giving pressure in front and behind the uterus. When this was got into proper working order the patient was able to walk and a cure was eventually obtained by supporting the uterus and carefully improving the general health by suitable dietary.

I may mention another case which has been under observation for the last eight or nine years. A young married lady was found suffering from anteфлекion, coupled with very great debility—chronic starvation. The uterus was treated successfully and the patient had her first child about two years afterward. After the pregnancy was over the uterus became again troublesome and a cradle pessary was again required; a second pregnancy with subsequent recurrence of the flexion, and a third with similar result; a fourth pregnancy occurred after a longer interval, and after it had ended satisfactorily the patient again came to me in consequence of feeling ill and in pain. On this last occasion I found to my surprise that the uterus was not anteфлекed, as I expected to find it from former experience, but retroflexed. This extremely interesting case, with all the circumstances of which I am perfectly familiar, offers an example of a uterus originally very soft and which has never, spite of repeated pregnancies, become really firm and solid. The case is rare and probably exceptional, but it teaches some valuable lessons.

I have seen at various times a considerable number of cases less marked than those above described, but well

characterized. In some of these cases no internal support was used, the alternating flexion being nevertheless observed to occur. In other cases the alternation followed on the use of a vaginal pessary, a retroflexion changing to an antelexion under the use of a Hodge-shaped pessary, and the opposite result following from the use of a cradle pessary in a case of antelexion. This is a very important circumstance to bear in mind, for a pessary which does its work well and satisfactorily at first may be found afterward not to be acting well. In those cases where this unusual flexibility of the uterus exists the pessary (properly applied) tilts the uterus, not only into its place, but *may* have the effect of producing the opposite kind of flexion.

I have on some few occasions been consulted by patients who have been subjects of retroflexion and treated by the Hodge-shaped pessary by other practitioners, but were still in search of relief. In these instances I have in five or six cases found that the uterus had gone over from retroflexion to antelexion. In one case very great anxiety and trouble had resulted from the supposed impossibility of giving the patient relief, but the true cause was found to be the over-action of the pessary. This over-action may of course in some cases be real, the pessary being worn too long or being too large, but that explanation does not apply to the cases I have now in my mind in which it was certain both that the original diagnosis was right and that the pessary was skilfully adjusted.

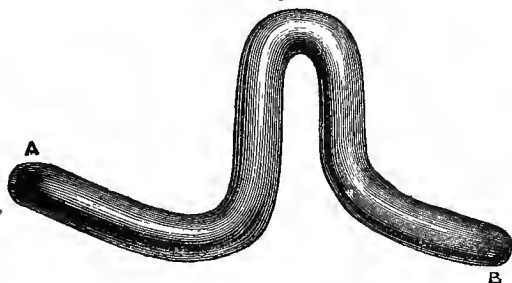
These facts offer evidence of the necessity for carefully regulating the action of vaginal pessaries and for ascertaining that they are acting as intended. This can only be done certainly by the careful use of the sound.

If the case be originally one of antelexion and a Hodge-shaped pessary be employed, one effect is very likely to occur—viz., an exaggeration of the antelexion. I have met with cases where this result has been observed, the Hodge pessary having been used under a mistaken notion of the nature of the case.

Treatment of Alternating Flexions.—These peculiar cases require a corresponding peculiar treatment. Probably the difficulty is capable of being surmounted in more than one way. The plan which I have followed in the cases which have come under my notice, and which has been successful, consists in using a pessary which is a combination of the Hodge and the cradle pessary. It might be described as a

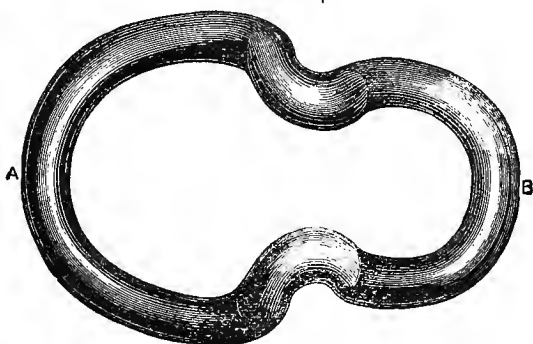
cradle pessary with the posterior ring elongated so as to resemble the corresponding part of the Hodge pessary. The accompanying drawing gives a better notion of the instrument than a description. The object of the instru-

FIG. 105.*



ment is to give a support both behind and in front of the uterus, and the pessary in question has been found to fulfil these indications in the cases in which I have employed it.

FIG. 106.†



In some of these cases it is probable that the pessary known as Fowler's pessary would prove serviceable. This is an instrument made of ebonite, and having a conical or funnel

* Fig. 105 shows a profile view of the "alternating" flexion instrument. A should be placed behind the cervix; B corresponds to the vaginal aperture.

† Fig. 106 represents a ground plan of the same instrument.

shape, into which the uterus falls. It is sold in various sizes.

Another instrument which would fulfil the indications required is the stem pessary. I have not employed it, however, in the cases of alternating flexion which have come under my notice, having found the arrangement above described to answer extremely well.

In conclusion it must be stated that no amount of precision and mechanical skill will be effectual in giving relief in these cases, unless it be conjoined with great care and attention in regard to the strengthening of the uterus. Careful and incessant nutritional treatment for as much as a year or more will be required in a case of alternating flexion in order to really cure the disease. If this latter element in the treatment be neglected, the uterus will, after the removal of the pessary, relapse into its former troublesome condition.

CHAPTER XXVI.

INCISION AND DILATATION OF THE CERVICAL CANAL OF THE UTERUS—STEM PESSARIES.

INCISION OR DIVISION OF THE OS AND CERVIX UTERI.—Various Methods of performing the Operation—Means for maintaining the Canal open afterward—Dangers of the Operation—Treatment of Cases of Imperforate Os Uteri.

DILATATION OF THE CANAL OF THE UTERUS.—Dangers of the Procedure—Means of effecting Dilatation—Various kinds of Tents—Method of Introduction—Metallic Dilators.

STEM PESSARIES.—Various Kinds—Simple Stems—Stems with supporting Vaginal Framework.

INCISION OR DIVISION OF THE OS AND CERVIX UTERI.

Incision or division of the os and cervix uteri is an operation practiced chiefly for the relief of dysmenorrhœa or for the cure of sterility. But it is also a means of facilitating the rectification of the shape of the uterus in chronic cases of distortion of the organ.

In order to enlarge the calibre of the uterine canal, Sir J. Y. Simpson first employed a metrotome caché, by means of which he effected an incision extending up to the os in-

ternum, first on one side and then on the other. The knife was guarded until the instrument had been introduced sufficiently far. Various modifications of this instrument have been employed. Dr. Greenhalgh's metrotome is double-bladed, and by it a bilateral section of the cervical canal is made, rather wider below than above. Dr. Barnes uses scissors to open up the lower part of the canal. Mr. Coghlan's metrotome is adapted for making an incision of the internal os; it has a probe point, and is then flattened out with a short cutting edge on each side. In some cases a careful use of a very small probe is required to inform us as to the direction in which the cervical canal goes, and a narrow director is now and then useful in guiding the knife when we are dealing with the internal os uteri.

It is very desirable to limit the extent of the incision at the external os uteri as much as possible. There is no doubt that it is unwise to divide the cervix widely, as was formerly done; and it is only necessary to incise the os uteri externum to such an extent as to admit of free access to the internal os uteri, and of the manipulations required for incising it, and inserting material for maintaining the aperture patent. There are cases in which the os externum is so small that the wall must be cut quite through to a certain extent.

The external os may be incised by a pair of curved scissors or by Sims's knife, and the internal os by the latter instrument. During the operation the patient is on the side in the Sims's position, the Sims speculum being used, and the os drawn down by the tenaculum or hook.

After the incision a small pyramidal-shaped piece of lint, steeped in perchloride of iron and glycerine, is carefully packed into the cervix, and to retain it *in situ* a piece of wetted bandage a yard or so in length is packed in the vagina. The bandage is drawn away at the end of twelve hours, but the cervical plug remains for two or three days. After removal of the cervical plug an ebonite plug can be inserted. Some operators introduce one immediately after the incision. The difficulty in maintaining the aperture is great, and has been mentioned by all who have performed the operation. After a month or six weeks the wound may become greatly contracted, but the canal does not usually return quite to its former dimensions.

The ebonite stem is preferable to other methods for preventing the canal from closing; for to maintain the patency

of the canal at the situation where the contraction mostly happens—viz., at the internal os—is often a matter of extreme difficulty. A stem of ebonite acts in a double capacity, keeping the canal straight as well as open.

The dangers of incision of the cervix uteri* are as follows:

1. Hæmorrhage is liable to be very considerable when the uterus is deeply incised; but this is not likely to occur when the depth of the cut does not exceed half the thickness of the uterine wall. Cases in which hæmorrhage has been troublesome are probably cases in which incisions have been made deeper than this. The bleeding is generally capable of easy control by means of the plug.

2. The danger of septicæmia is the chief one. It is very slight when ordinary precautions are taken. Dilatation appears to be dangerous after a cutting operation, and it is probably most dangerous when the incised surfaces are covered with puriform secretion. It may be connected with undue depth of the cutting operation. In any case it is no doubt dependent on entrance of putrescent material from the canal of the cervix into the cut vessels (veins or lymphatics) of the uterus. The free use of carbolized oil in manipulating the cervix uteri, and especially the avoidance of dilatation during the few days after the operation, are recommended.

Treatment of Cases of Imperforate Os Uteri.—In some rare cases the os uteri is imperforate congenitally, and there is no outlet for the menstrual fluid. And the os uteri may become occluded after labor, from effects of operations, etc. Under these circumstances, also in cases of physometra, we may be called upon to evacuate the contents of the uterus artificially.

* Dr. Montrose A. Pallen (1877) gives a valuable summary of the subject of incision and division of the cervix uteri for dysmenorrhœa and sterility, in "Am. Journ. of Obst.," vol. x. p. 364. It appears that Dr. Sims has since 1874 adopted a plan of incising the cervix, and then dilating it directly after incision by a dilator; after which operation he inserts a plug of glass, ebonite, or aluminium into the cervix, which is retained for from two to six days afterward, together with iron cotton. Dr. Pallen states that since 1865 he has himself operated 337 times, the incisions varying in different cases. The results were in fifty per cent relief of the dysmenorrhœa and thirteen to fourteen had children, while a quarter were not benefitted. In three cases cellulitis followed. In two death occurred, but not as a result of the operation. Comparing these results with cases in which Dr. Pallen used tents, it appears that in 150 cases, where tents were employed, two died rapidly of metro-peritonitis, while fourteen had pelvic cellulitis.

In congenital cases, we have to make a communication between the uterus and vagina in the best manner the circumstances may admit. We endeavor to find the os uteri, and not succeeding in this, search is made for the cervix. We may fail in discovering any trace of either, the distension of the uterus having obliterated all traces of it. In such a case a point is to be chosen which is nearest the supposed seat of the cervix, and the opening is to be made at that point, taking care that the instrument used be directed toward the centre of the enlargement, so as not to run a risk of wounding the bladder or rectum. In reference to the manner in which the uterine contents are to be allowed to escape, certain precautions are necessary. It is, I consider, advisable to allow the fluid to escape very slowly. After the first part of the treatment—the evacuation of the fluid—has been gone through, we have to take measures for maintaining the canal of the cervix open. This is not unfrequently found troublesome, there being a tendency to reclosure of the canal, necessitating a new operation. Gradual dilatation by means of bougies or by the use of tangle tents is most appropriate under such circumstances.

The puncture of the tumor from the rectum is only admissible in cases where the other operation from the vagina is absolutely impracticable.

In cases of acquired occlusion of the os uteri or cervical canal, the canal is to be opened and made pervious by a carefully performed operation, which must be determined by the nature of the case. In many of these cases it is possible to find out the track of the old canal by means of probes, and, if this can be done, it renders further procedures more easy. A small canula and trochar, long enough to reach the uterus, is sometimes necessary to evacuate the fluid. The canal once opened the occasional use of the sound, or of graduated metallic bougies, is required to preserve its patency.

DILATATION OF THE CANAL OF THE UTERUS.

Dilatation of the uterine canal is a procedure required in a certain number of cases and for various reasons. It is an operation of delicacy and not seldom attended with considerable difficulty. And it is a procedure which is not unattended with danger.

The objects for which the operation is undertaken are, as already remarked, various: To facilitate introduction of a stem-pessary, to relieve dysmenorrhœa, to cure sterility, to explore more completely the uterine cavity, as a help toward the cure of ante flexion or retro flexion of the uterus, etc.

It will be well to speak in the first place of the dangers of the procedure. The great danger is the setting up of the pyæmic process, or local cellulitis. Sponge tents, under certain circumstances, cause rapidly fatal pyæmic disease and peritonitis; but other dilating agents are also capable of producing serious or even fatal illness of a similar kind. Abrasion of the cervical canal, or a partly healed wound of the same, appears to favor occurrence of dangerous symptoms. A wound, or laceration, or contusion of the cervical canal, in the process of dilatation may lead to the same result, and this is more especially liable to happen when puriform secretions are lying either in utero or in such a position that they obtain ready access to the abraded or lacerated surface. The action of a sponge tent is rapid, and the stretching of the cervix produced is considerable; the sponge, if not rendered antiseptic, very speedily undergoes a putrescent change, and after a few hours is generally fœtid. The expanded and partly abraded surface of the cervix is then in contact with the putrescent product, absorption occurs, and serious symptoms set in forthwith—at least, this result may occur. Introduction of a second sponge tent immediately on withdrawal of the first, especially if the first has been allowed to remain as long as two days, is still more likely to prove prejudicial. Repeated slight abrasions or lacerations of the cervical mucous membrane, liable to be produced by use of bougies or by metallic dilators, may give rise to similar results. The presence of a wound or abrasion of the cervix seems, so far as my experience goes, to be the predisposing condition; but the presence of an exciting cause such as putrescent or puriform fluid at the spot so abraded or wounded, appears to be equally necessary.

In illustration of the foregoing statements, it may be mentioned that at a discussion on sponge tents at the Philadelphia Obstetrical Society in December, 1873, various cases of death were mentioned by speakers: (1) Death after insertion of a third sponge tent, the last retained two days, patient having moved contrary to order; (2) death

after a second tent, interval being two days; (3) death after a third tent, interval between each one day; (4) death after use of three sponge tents.

Sponge tents are unequaled for certainty and rapidity of action, but must be used with great care. One operation appears to be safe enough, but not so a repetition of operations. Sponge tents are sometimes antisepticized before being used, but it seems difficult to render them certainly aseptic. Sponge is certainly better adapted for cases requiring quick and extensive dilatation than for cases when slight dilatation only is needed. Thus it is not easy to thread the internal os as a primary operation in cases of acute flexion—the stiffness of the tent becoming often lost before it has passed the narrow part of the canal. When sponge, or indeed any like material, is employed, carbolized injections should be always freely employed.

Sea Tangle.—Tents of this material, first introduced by Dr. Sloan of Ayr, have been frequently used during the last few years. They are tolerably manageable, and very powerful in action. The material is very hard when dry, and can be shaped by a knife. Tents of this material are sometimes made hollow, as first suggested by Dr. Greenhalgh, to induce more rapid swelling. When the uterine canal is much flexed or tortuous, the introduction of the tent is not easy unless it be a little softened before introduction. And under any circumstances the operation is one requiring some little skill and attention in order that it may be successfully carried out.

In cases where it is required to dilate the cervical canal extensively, bundles of sea-tangle tents may be employed according to Dr. L. Atthill's suggestion. Such a dilatation may be required in order to obtain access to an intra-uterine polypus or fibroid tumor.

The slippery elm and tupelo are other materials from which uterine tents are constructed.

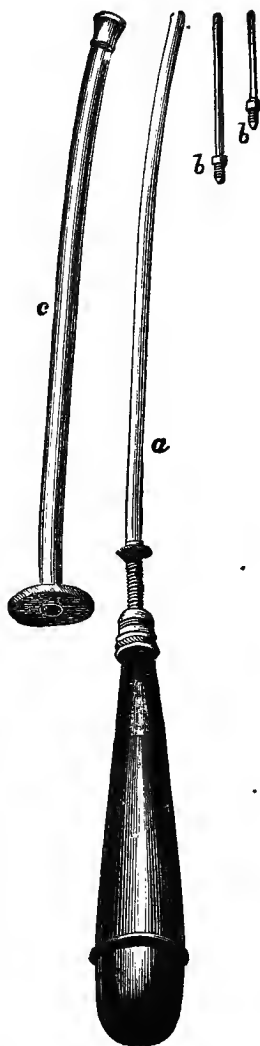
In introducing a sponge tent, the lateral Sims's position is the best, the Sims speculum being employed and the os drawn down and fixed by a hook. This has also the effect of somewhat straightening the uterus and thereby facilitating entry of the tent. An instrument such as that shown in Fig. 107 is a good sponge tent introducer. Six or eight hours is the proper time for the action of the tent: it must be then removed.

Another good tent introducer is Fig. 108, in which a me-

FIG. 107.



FIG. 108.



tallic pointed needle supports the tent during introduction, and is readily detached from it when it is well placed in the cervical canal.

[The forceps are preferable because the tent can be firmly held at any angle.]

In order to procure proper dilatation of the uterine canal, the tent must be made to pass through the internal os uteri and be there maintained while it is at work. Otherwise it is found, perhaps, that the tent has slipped and no material advance is made. The tent should of course be long enough to reach just beyond the internal os; and it should project a short distance into the vaginal canal. It should be always firmly attached to a silk or strong hemp ligature for withdrawal.

Another method of dilatation is that known as Mr. Lawson Tait's,* consisting in introduction of a series of three box-wood conical plugs into the os uteri, and applying pressure thereto from the outside by means of an india-rubber elastic band. The first plug is removed after a few hours when it has done its work, and is replaced by a larger one; the second by a third. In this way the canal is gradually dilated. The plug is kept in place by a vaginal stem which screws on to the plug, and the elastic band is attached to this stem outside the vagina. The elastic thread is fixed to a bandage encircling the waist.

Metallic Dilators.—These are undoubtedly convenient and efficacious in cases where slight dilatation only is required, and are also very useful in the treatment of chronic flexions, especially anteflexion. A set of metallic bougies regularly graduated, very applicable for these purposes, are now kept by surgical instrument makers. There are various metallic dilators—Dr. Marion Sims's, Dr. Priestley's, Dr. Ellinger's, etc. After having tried several of these, I have found the most serviceable one which I had constructed by Coxeter some few years since, which is a modification of one originally made for the late Dr. Rigby by Mr. Ferguson of Giltspur Street. It is on the principle of a glove-stretcher, and can be inserted wherever the ordinary sound can be made to pass. It possesses a knob like that of the ordinary sound to indicate the depth of insertion, and should also have a slight groove cut on the opposite side for similar purposes. After insertion, the two blades are opened by

* *Lancet*, November 1, 1879.

FIG. 109.*

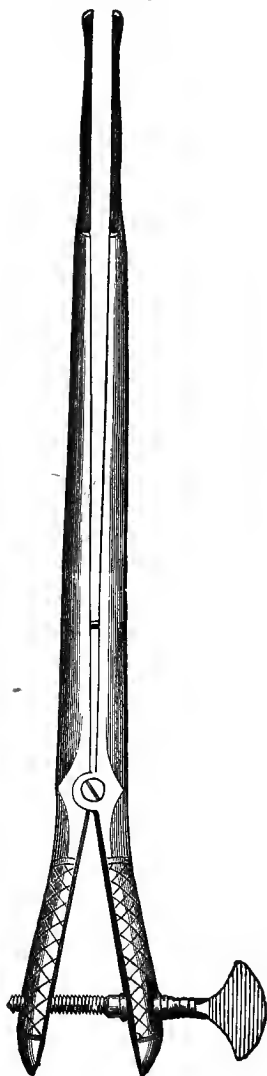


FIG. 110.*



* Fig. 109: Graily Hewitt's uterine dilator (reduced). Fig. 110 shows a lateral view of the part of the instrument which is introduced into the cervical canal (actual size).

FIG. III.*

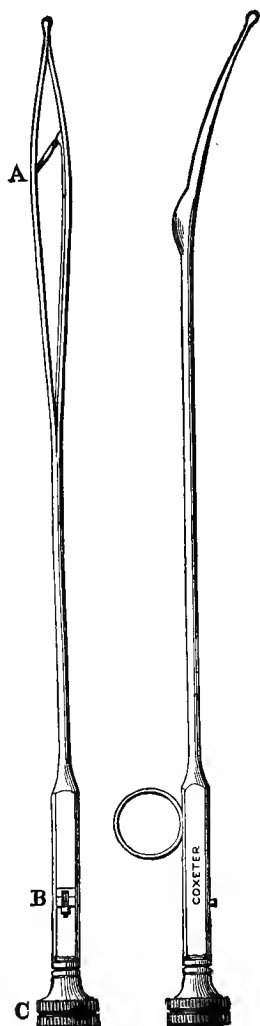
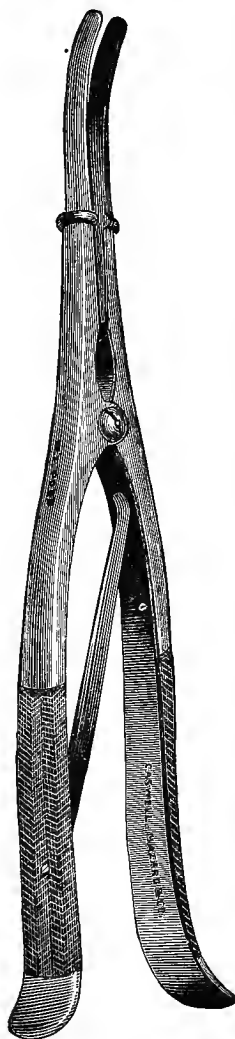


FIG. II2.*



* Fig. III represents Dr. Priestley's dilator.

† Fig. II2 represents Dr. Marion Sims's dilator.

a screw slowly and deliberately, and the force exercised is expended at the spot where it is most needed—*i.e.*, the os

FIG. 113.*

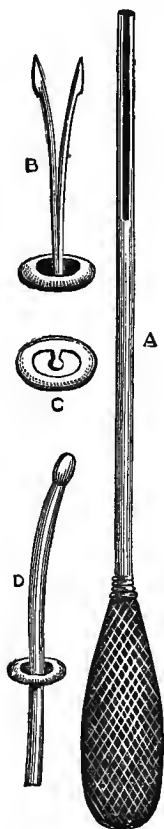
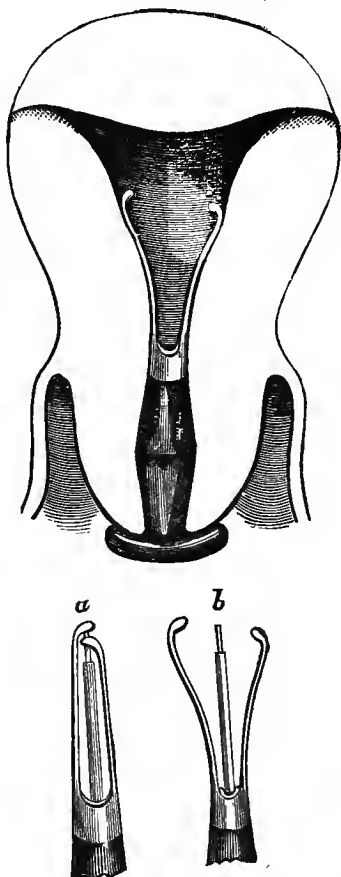


FIG. 114.†



uteri internum. It is an instrument of very great power, and should therefore be employed very carefully. It has

* Fig. 113 represents Dr. Chambers's stem and apparatus for introduction. ("Obst. Jour.," vol. i., p. 2.)

† Fig. 114 represents Dr. Granville Bantock's stem and mechanism of introduction. ("Obst. Journ.," vol. xiii., p. 1.)

the great advantage that it does not slip out of the canal. I employ it frequently, but am careful to do only a very little at a time with it, and generally to allow an interval of two days between each dilatation—that is to say, in cases where the instrument is used for the purpose I most commonly employ it, in the treatment of a chronic flexion, and with the view of permanently straightening a tortuous and contracted canal.

UTERINE STEMS.

Uterine stems may be divided into two classes—(1) Those which are intended to be used alone, and (2) those which are used in conjunction with a supporting vaginal disk or framework.

Simple Stems.—These are generally provided with a small button-shaped portion, which, when the stem is in position, rests on the vaginal floor.

With few exceptions the material employed has been rigid—ebonite (hard rubber), metal of various kinds, and glass (Dr. Meadows).

Various Shapes.—Dr. Chambers recommends a modification of the late Dr. Henry G. Wright's stem. It is a vulcanite stem, double; but the two arms are kept together until the stem is inserted by the stylet. Withdrawal of the stylet allows the arms to separate, and the opening out of the two arms prevents the escape of the stem.

Dr. Granville Bantock's stem is partly of vulcanite, and the intra-uterine part consists of two arms of German silver; these latter spring apart and retain the stem after introduction.

Dr. Clement Godson's stem is of aluminium, made in five sizes; it is retained by a spring within the tube, which projects at apertures near the extremity and within the uterus.

Mr. Lawson Tait's stem is a galvanic instrument with a slight projection of india-rubber to act as a retaining agent.

Dr. Alfred Meadows's stem is of glass with a small button of ebonite.

A quite elastic stem, composed of india-rubber tubing, was recommended by the late Dr. Squarey.

Stem with Supporting Vaginal Framework.—The instrument here figured, which has been sometimes termed the "pad-lock" pessary, was devised by myself, and described in the last edition of this work (1872). Fig. 117 shows at B the

stem of ebonite, one and a half inches in length, the lower portion hollow to admit the inserting stylet. At A is shown the supporting vaginal disk, of an oval outline, having a socket into which the stem fits when *in situ*. The stem is intended to fit rather loosely in its socket. The plug or stem which I have employed for this purpose is one and three quarter inches long, conical in shape, with a bulbed

FIG. 115.*

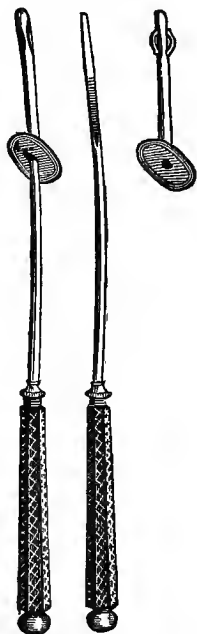
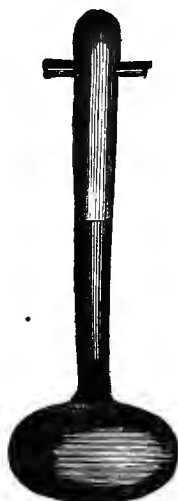


FIG. 116.†



termination. The diameter varies; the smallest has a diameter of three sixteenths of an inch at its bulbed termination. The stem ends below by a broad basis half an inch in diameter, and is perforated for a short distance for facility of introduction, the ordinary uterine sound fitting into the perforation, and acting as a handle. The stem is

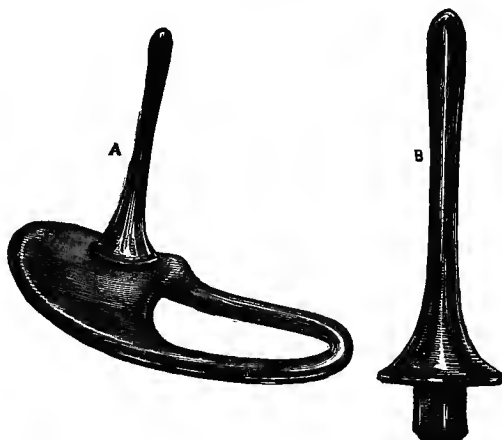
* Fig. 115 shows Dr. Clement Godson's stem. ("Obst. Journ.," vol. xvii., p. 286.

† Fig. 116 represents Mr. Lawson Tait's stem.

retained in its place—for it has a great tendency to slip out—by the oval support, made to fit the vaginal canal.

In order to introduce the instrument, the sound, as a handle, is passed through the collar of the vaginal framework, and on it is placed the ebonite plug. After the plug is placed *in situ*, the ring is made to slip up the sound until finally the little plug finds its place in the supporting collar. The sound is then withdrawn and the work is done. Only those who have attempted to introduce rigid plugs into a contorted or contracted canal, and to maintain them there,

FIG. 117.*



will appreciate the necessity or usefulness of this contrivance, which I have found to answer extremely well. This instrument is made by Coxeter & Son. I have found that it works well in practice, and it has been very largely employed by Dr. W. Murray of Newcastle-on-Tyne; the vaginal part requiring to be generally one and three eighths inches by two and three eighths, but sometimes smaller.

Dr. Routh's instrument is on the same principle. His stem is articulated to a cross-bar attached to a Hodge pessary.

* Fig. 117 represents Graily Hewitt's stem pessary (so-called "padlock" pessary). B is the stem (actual size): A shows the stem fitted into the supporting vaginal framework (reduced in size). As at present made the framework is more flattened than it here appears.

sary, its position in regard to which can be regulated by a screw.

Dr. Wynn Williams's instrument is another modification of the same principle. In his pessary the vaginal framework is of wire, covered with india-rubber, and admits of lateral compression. It has an india-rubber diaphragm perforated with holes, the stem is set near the distal part of the vaginal supporting framework. In a more recent, improved form the stem rests in a cup-shaped depression in

FIG. 118.*



the diaphragm. It is very easily applied and is a very ingeniously constructed instrument.

Dr. Meadows's instrument is on a like principle, and also allows a certain degree of motion of the stem on the framework.

Dr. Thomas describes a combination of stem with an anteversion pessary which he has found useful in certain cases.

* Dr. Wynn Williams's stem pessary. "Obst. Trans.," vol. xiv., p. 308.

CHAPTER XXVII.

ASSOCIATION OF PREGNANCY WITH FLEXIONS OF THE UTERUS.

GENERAL OBSERVATIONS.—Frequency of Abortions in such Cases: Reasons for this—Difficulty of Expansion of the Uterus.

RETROFLEXION AND RETROVERSION OF THE GRAVID UTERUS.—1. Flexion before Pregnancy occurs—Natural History, Symptoms, and Effects.

2. Flexion occurring after Pregnancy has commenced—Diagnosis—Treatment—Reduction by Positional Treatment; by other Means—Treatment of the Bladder.

ANTEFLEXION OF THE GRAVID UTERUS—a Frequent Condition and a Frequent Cause of Abortion.—1. Cases where the Anteflexion occurs after Pregnancy has begun—2. Anteflexion precedes the Pregnancy—History of these various Cases—Reasons why the Complication is not generally recognized as an important one—Diagnosis—Severe Nausea a Common Symptom—Author's Views on this Subject—Retention of Portions of Ovum another Result of the Flexion—Treatment in various Cases according to severity of the Case—Elevation of the Uterus, how to be effected—Relief of the Sickness—*Modus operandi* of the Treatment—Dr. Copeman's Method—Dilatation of the Cervix for Cure of Sickness discussed and explained.

SUBSEQUENT TREATMENT.

The subject of the association of flexions with pregnancy is a very interesting and important one. Retroflexion of the uterus associated with pregnancy has been long known; but concerning the association of anteflexion with pregnancy little has been published.

When the uterus is in a flexed condition pregnancy may not occur at all. When pregnancy does occur under such circumstances, the result varies in different cases. It is necessary to point out, and to endeavor to explain, the various results observed in different instances.

If the flexion be slight in degree and not of long duration (say not over two years), pregnancy may proceed to the full term. It is generally, however, noted in such cases that the early part of the pregnancy is attended with a troublesome amount of nausea, and there may have been other discomforts observed as soon as pregnancy set in.

When the flexion is more chronic or more severe in degree, it generally happens that an abortion occurs during the second, third, or fourth month.

The pregnancy may begin before the uterus becomes affected with flexion. There are instances in which the

uterus, having been in a normal condition, becomes gravid, and soon after falls into a flexed condition.

In cases where abortion happens during the early months of pregnancy, we cannot tell without a careful inquiry into the previous history and other facts whether the flexion followed the pregnancy or preceded it.

Abortion is a very frequent result of the association of pregnancy with uterine flexion, and such association is really the most common of all the causes of abortion.

The reason why abortion is so liable to occur in cases where the uterus is flexed appears to be, principally, the interference which the distortion of the uterus offers to the proper expansion of the cavity. But the distortion would have very much less influence than it is found to have if the body of the uterus were free to move. Owing to the action of gravity on the one hand, and the hindrance offered to the ascent of the uterine fundus by the sacral promontory (in cases of retroflexion), and by the symphysis pubis (in cases of ante flexion), the uterus is, however, not free to move and expand in the normal manner.

If we suppose the uterine walls to be in a condition of health, the conditions just mentioned above would be the only ones to be considered. Given freedom to expand and space in which to expand, there would be no reason why the uterus, though bent upon itself, should not unbend, expand, and do its proper work in the ordinary manner—the above difficulties being removed.

But in many cases we have further obstructive conditions. When the flexion is a chronic one, the uterine walls are liable to become changed in thickness, and in other respects. Too thick in some parts, unduly thin in others, corrugated, compressed, sometimes constricted on the peritoneal surface by adhesive bands,—under such circumstances the expansion of the uterus is a matter of difficulty, and an abortion may result at an early period of the pregnancy.

There are good reasons for believing that in some cases the difficulties in the expansion of the uterus, though not immediately resulting in expulsion of the ovum, produce interference with the placental growth in such a way that premature labor and delivery of a dead child occur later on.

The hardening and compression of the uterine tissues resulting from flexion are more particularly liable to be present near the os uteri internum, and there are various curious

clinical facts hereafter to be mentioned which are only to be interpreted by supposing a condensation of the uterine tissues to exist at this situation. If the puckering and condensation be considerable, it is evident the uterus may be so held and maintained in its distorted condition that expansion of the organ is difficult. The difficulty in question finds a solution, in many instances, in the occurrence of abortion.

But a further result of the existence of acute flexion is probably actual disease of the decidua vera, and consequent abortion brought about in this way. The growth of the decidua, which is a part of the natural process of pregnancy, cannot proceed normally at certain situations, and, as has been shown by examination of actual specimens, it may become actually disorganized, and thus lead to the occurrence of abortion. Such is probably the explanation of two very interesting observations made by Dr. Slavjansky, and published in 1873, entitled "*On Endometritis Decidualis Chronica as a Cause of Abortion in some cases of Displacement of the Pregnant Uterus.*" *

All cases of uterine flexion in which pregnancy occurs are not followed by abortion, but it is mechanically almost impossible for pregnancy to continue if the flexion be unrelieved. As a matter of fact, many cases of this kind are so relieved; the uterus becomes straight by expansion. In others the flexion remains, and as the uterus goes on expanding the result is in many cases to actually increase the flexion.

RETROVERSION AND RETROFLEXION OF THE GRAVID UTERUS.

Desgranges (1715), Gregoire (1746) and William Hunter (1754), described cases of "retroversion" of the gravid uterus. Gooch in his lectures (quoted by Ashwell, "*Diseases of Women*," p. 597) gives a full narrative of William Hunter's celebrated case. In this case the patient was four months pregnant, when she began to suffer from retention of urine. This was relieved by catheter but again occurred. Mr. Wall, who was the medical attendant, recognized the case as one like that published by Gregoire. He tried to reduce the retroverted uterus, but failed, and then sent for William Hunter, who recognized the nature of the case also, and

* Paper read before the Obstetrical Society of Edinburgh, July, 1873.

attempted reduction unsuccessfully. There was obstinate constipation. The patient died in a few days. A second case, it appears, occurred soon after, and the patient could pass neither urine nor fæces. The catheter could not be introduced; it was proposed to puncture the bladder; the patient refused, and at length felt something burst, which proved to be the bladder, and she expired in a few hours. In both these cases the state of the uterus was substantiated by an autopsy.

In Ashwell's work will be found recorded several of the most interesting cases of retroversion of the gravid uterus which have been observed since William Hunter's case, including some noted by himself. These cases made evident the great importance of the retention of urine and fæces as clinical features of such cases; for death was usually found to occur either from irritation, by inflammation involving the peritoneum, or by rupture of the bladder. Great relief always occurred when the bladder could be emptied, and in some cases, when the disease was detected early, rectification of the uterus followed the careful daily evacuation of the bladder. On the other hand, evacuation of the bladder, when effected, did not always ensure the possibility of reduction of the displacement. Thus in one case (Mr. Wilmer's) the bladder was relieved, but death soon occurred, and the uterus was found so firmly wedged in the pelvis after death that it could not be raised up till the symphysis pubis had been sawn away. In Dr. Ashwell's time he found reason to blame the little importance attached by authorities to replacing the uterus, and he forcibly directs attention to the advisability of reducing the displacement, and at as early a period as possible. He also gives directions for accomplishing it which we have hardly improved upon since his time. Ashwell used and recommended careful pressure upward, the patient being in the knee-and-elbow position.

The pressure was to be made by the fingers in the vagina or, if that plan did not answer, in the rectum. Denman, followed by Blundell, also employed the knee-and-elbow position, and speaks of it as sufficient, if kept up sufficiently long to procure the reduction of the uterus, provided that the bladder be kept empty. But Ashwell disbelieved the efficacy of this positional treatment alone in severe cases.

As to the difficulty in introducing the catheter sometimes

found to occur, Ashwell states that a long flexible male catheter can always be employed without delay or suffering. Should it be impossible to use the catheter the suprapubic puncture of the bladder is required. In a case related by Ashwell eleven pints of ammoniacal urine was obtained by a long catheter, the uterus was reduced, but abortion and death in five days followed.

An interesting paper by the late Dr. Phillips is recorded in vol. xiv. of the "Obstetrical Transactions," "On Retroflexion of the Uterus as a frequent cause of Abortion." Dr. Gervis also communicated some most instructive cases to the Obstetrical Society, recorded in vol. xvi. of the "Obstetrical Transactions." The discussion which followed the reading of these papers may be consulted with advantage.

The dislocation is primary or secondary. Formerly it appears to have been taken for granted that it was always a primary affection. The late Dr. Tyler Smith was one of the first to point out that the flexion frequently precedes the pregnancy. It is now well known that this view is accurate so far as a large majority of cases is concerned. But, on the other hand, the dislocation is also undoubtedly primary in some few instances.

In the chapter on Retroflexion of the Uterus some account has been given of the frequency with which abortions occur in cases of this disease.

1. *Cases in which Flexion precedes the Pregnancy.*—The natural history of cases when pregnancy occurs in a case of retroflexion is as follows: Pain is usually felt more or less from the commencement, or there is at all events a sense of discomfort, bearing down and weight, and inability to move without producing pain. Difficulty in defæcation, due to the pressure of the body of the uterus on the rectum, is commonly observed. Nausea, sometimes to a most distressing extent, is commonly present. In some cases it is the most severe of all the symptoms. (The connection of obstinate vomiting with existence of retroflexion of the gravid uterus will be discussed later on.) As the pregnancy advances these symptoms increase in severity, and it is found difficult to pass urine, the bladder is liable to become distended, and there is retention. In not a few cases, the fact that the patient passes urine very often disguises the real nature of the case and conceals the existence of retention. By the third month, the uterus, being now of considerable size, exercises great pressure on all the organs and

structures near it. At this time, or before this time in a few instances, nature shows herself equal to the emergency and the uterus rises upward, the posterior rotation diminishes, and relief of the symptoms follows. But if the patient be not thus relieved naturally, and if its true nature be not understood, one of two events results—either (1) the uterus throws off the ovum and abortion occurs; or (2) the uterus continues to expand, though under increasingly unfavorable conditions. The whole pelvis is occupied by the uterus. The cervix is tilted high up above the symphysis pubis, and the bladder becomes so much dilated by the retained urine that it may reach to a point above the umbilicus. All the symptoms increase in intensity. The pressure is exceedingly painful, labor-like forcing pains are experienced, the rectum is impassable, the urine escapes in drops only, the ureters probably undergo dilatation, and the pelves of the kidneys also. The sickness may be incessant, the prostration extreme, the pulse quick and small, and irritability alternating with great exhaustion (see chapter on Vomiting of Pregnancy). When this latter condition of things persists up to the fifth month death may result from the accumulation of evils then present: there is fever, quick pulse, gradual prostration, uræmia probably; in some cases rupture of the bladder may occur and destroy the patient. A third course is sometimes observed: the uterus continuing to expand sends an extension upward into the abdomen, and does in fact become partly an abdominal organ; but at the same time the part within the pelvis remains there. The uterus thus acquires a curiously abnormal shape; and in the celebrated case related by Dr. Oldham* no abortion occurred, but the uterus continued to retain this shape until the full term of pregnancy had been reached.

Rectification of the position, as already remarked, sometimes occurs naturally, and if so, it generally happens before the fourth month has been reached. The larger the uterus the greater the difficulty offered to the elevation of the now greatly distended organ, owing to the projection of the sacral promontory. It seems probable that the great distension of the bladder sometimes operates at a critical moment in preventing the rectification. The rectification may occur suddenly or gradually.

The disturbance of the functions of the bladder are among

* "Obst. Trans.," vol. i.

the most serious of the effects produced by retroflexion of the gravid uterus. The distension of the bladder and irritation of its mucous membrane sometimes produce actual exfoliation of the lining, and even when this does not occur the lining may become seriously damaged. The whole lining has in some cases come away in a single piece. When the condition is unrelieved the distension, beginning at the bladder, extends up the ureters and affects the pelves of the kidneys, in some cases causing fatal arrest of the kidney functions. As already stated, rupture of the bladder has occurred in some cases.

Certain peculiarities of the subsequent history require notice. Thus, it frequently happens that when abortion occurs the abortion is an incomplete one, the fœtus being expelled but the membranes left behind. The retort shape of the uterus favors retention of the thickened bag of the ovum, and it may be some days or even longer before it is expelled. Septicæmia may follow.

Further on still, the condition of the uterus is liable to be rendered worse than before. The uterus, having discharged its contents, but being considerably enlarged and retaining its flexed condition, the process of involution is arrested and much additional trouble results; so that a retroflexed uterus which has become impregnated and has thrown off the ovum is liable to become even more flexed, and to give rise to more irritation than before. We sometimes meet with cases where there have been a succession of abortions from this cause, the uterus becoming finally so much distorted that pregnancy ceases to be possible.

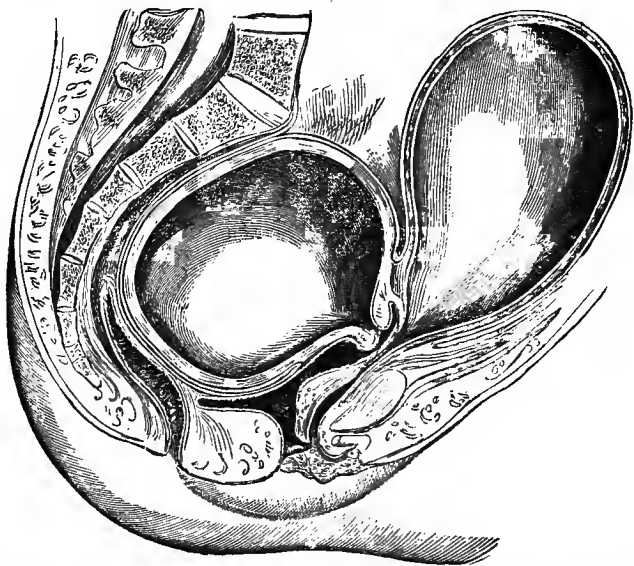
2. *The Flexion and Displacement occur after Pregnancy has commenced.*—An accident, such as a fall, or lifting a heavy weight, or a continuous exertion of any kind, may suddenly produce retroflexion of the gravid uterus. There are several well-recorded cases of this kind, where the uterus was apparently in a sound state previously and was evidently afterward displaced. And the displacement may occur as late as the fourth month—possibly even a little later.

Once produced, the symptoms and course of the affection are similar to those in the former class of cases. The chief difference is that the symptoms usually set in with abruptness when the displacement happens after pregnancy has commenced.

The *diagnosis* of the existence of retroflexion of the gravid uterus is most important, for very serious results may fol-

low from its being overlooked. The diagnosis is not difficult if a proper examination be made. The tilting upward of the os uteri behind the pubes, the difficulty of reaching it, the evident displacement of the bladder upward, are easily recognizable in most cases. The presence of a large tumor above the pubes when the bladder is distended is rather misleading, for it has been sometimes taken to be the normally placed gravid uterus. A vaginal examination

FIG. 119.*



is imperative; and the rounded tumor of the uterus behind the vagina, reaching down, it might be, close to the vaginal outlet, is easy to appreciate by the touch. The only difficulty is in deciding that the tumor so felt behind the vagina is really the uterus, for it might be due to hæmatocele or to hardened effusion, the result of pelvic cellulitis, or possibly be an ovarian cyst. The use of the catheter would, of course, clear up any doubt as to the nature of the abdominal swelling felt above the pubes. It is to be remarked

* Fig. 119 represents the gravid uterus in a state of retroflexion at about four months of pregnancy.

that the tumor felt behind the vagina may be a little to one side of the middle line, but when the pregnancy is farther advanced it is median.

The *treatment* is not difficult when the malady is recognized at an early date.

Take, for instance, the case of a patient six weeks pregnant, the uterus being retroflexed. Here the treatment consists in gradually pushing up the fundus uteri by pressure from behind, or aiding its ascent by positional treatment alone. If the retroflexion is not of long standing, positional treatment—*i.e.*, avoidance of sitting, occasional knee-and-chest position—may prove sufficient. Generally, however, it is best to insert a Hodge-shaped pessary. A rather thick pessary of the Albert Smith type, is best for this purpose. Such an instrument, properly fitted, is most efficacious. The pessary is worn till the middle of pregnancy, and is then removed. It has happened in my experience many times that patients under treatment for retroflexion have become pregnant while wearing a pessary of this kind. Under such circumstances it has been my practice not to remove the pessary until about the middle of pregnancy.

Taking a case where the pregnancy has advanced to three months, or a little beyond that time, the patient in a condition of much suffering, and the nature of the case only for the first time recognized, the treatment is more difficult. The bladder should be first relieved, and the uterus replaced as soon as the circumstances of the case render it possible. Sometimes it is found practicable to effect the reduction at once. In other cases the uterus has become so fixed by the swollen condition of the tissues adjacent, or so jammed down in the pelvis by the actual size of the uterus, that, without exercising a good deal of force, a rapid reduction is not advisable, or even possible. In cases where the condition of the patient has become a really critical one, and the constitutional and other symptoms of very intense character, it may be advisable to defer operative reduction for twenty-four hours after the use of the catheter. Indeed, there appears to be danger in suddenly removing a very large quantity of urine from the bladder and *simultaneously* attempting the operation of reduction of the uterus, on account of extreme shock liable to be produced.

It remains to be pointed out how the reduction is to be effected. One method consists in placing the patient in

the knee-and-chest position, opening the vagina by the Sims speculum, and allowing air thus to pass into the vagina. Dr. Mundé* records a case where this procedure succeeded at once in the case of a patient eleven weeks pregnant. The same author refers to a case where Dr. Solger, of Berlin, had a like result in a patient four months pregnant. The manœuvre is one first suggested by Dr. Campbell, of Georgia, for reduction of retroversion (non-gravid condition). This method would probably not succeed where there is great swelling and compression of the adjacent tissues. Another method consists in placing the patient in the same position (as practiced by Denman and Blundell), and then exercising pressure on the uterus from the vagina by means of the fingers; or the pressure may be made from the rectum in the same way. A sustained pressure thus made has generally been found to answer extremely well. A round india-rubber air-ball introduced into the rectum and distended with air offers a means of producing continuous pressure in a convenient direction, and it is a method which has also been found successful. Unless the case were one of extreme character, one or other of these methods could be adopted, the pressure being graduated according to circumstances. If too much force be employed there is a risk of inducing abortion. In the very worst cases, the patient being *in extremis*, and the case practically untreated previously, it would be best to evacuate the uterus by drawing down the os uteri with the finger, breaking the membranes, and allowing an abortion to occur.

After reduction of the displacement a pessary should be introduced to prevent possibility of recurrence, the pessary to be removed at mid-term of pregnancy. Various precautions are requisite in the treatment, without which failure may result. The horizontal position must be rigidly maintained in most cases for two or three weeks after the reduction, and it will be a help to direct the knee-and-chest position to be employed five or six times a day during this time. The bowels must be kept in good order by daily enemata. The sitting posture is the worst of all; a little walking is far less objectionable. As regards the pessary to be worn, it is sufficient to refer the reader to the chapter on Retroflexion for information. It is best to employ a

* "Am. Obst. Trans.," vol. ix., p. 292.

pessary rather thicker, though not necessarily larger, than in cases where the uterus is in a non-gravid state.

We have not yet done with the subject. It is found that when pregnancy is over, the uterus has frequently a great tendency to return to the retroflexed state. In one case some time ago under my care, the displacement returned no less than three times after three successive pregnancies. The following was the order of events: retroflexion with gravid uterus, treatment by pessary, removal at mid-term, pregnancy continuing to full term; uterus found returning to retroflexed condition a month after delivery, insertion of the pessary, pregnancy recurring during the wearing of the instrument, removal at mid-term, etc. This is by no means a solitary case, and conveys a lesson as to the necessity for precaution in the subsequent management of such cases.

ANTEFLEXION AND ANTEVERSION OF THE GRAVID UTERUS.

There can be no doubt that the most common cause of abortions is the presence of anteflexion of the uterus. The result of observations extending over many years has at least convinced me of the truth of this statement. That it is not as yet a matter of general professional belief is due to the fact that cases of anteflexion of the non-gravid uterus are often passed over and not recognized as such.

The following is a very characteristic case related by Boivin and Dugès:*

Anteflexion at the Beginning of Pregnancy.—A young woman æt. 24, third pregnancy, the last four years previously, one only at full term. Supposed now to be in second or third month. In a few weeks the os descended lower than usual. The cervix uteri lay on internal surface of coccyx. There was a rounded tumor somewhat larger than the natural size of the fundus uteri, and painful when pressed, situated between the anterior parietes of the vagina and the bladder. It was the body of the uterus directed horizontally forward and recurved at a right angle upon the cervix; a deep sinus into which the top of the finger was easily inserted answered anteriorly to the point of the flexion. This was owing to a firm contraction of the tissues; for upon pushing the body of the uterus the cervix was raised with

* "Diseases of the Uterus" (translated by Heming, 1834), p. 110.

it. The cervix not at all congested, but longer than usual, labia prominent, especially anterior, and its orifice open. In a few weeks pregnancy no longer doubtful; later on cervix found higher up, the body of uterus still inclined on cervix; intervening fold much diminished. No doubt the ante flexion would cease as cervix, expanding, became shortened.

Equally characteristic is the following, related by Ashwell: *

Anteflexion in Early Pregnancy.—The wife of a medical man, æt. 36, in first month of pregnancy fell from a steep stair, the bowels being at the time very constipated. No hæmorrhage, but syncope for an hour. For six or seven weeks she was never free from a heavy bearing-down sensation in front, rendering micturition frequent and painful, defæcation not improved. She was irritable and feverish. The husband thought the womb was retroverted. At the end of third month I found the cervix uteri in its natural position, but not so the fundus, which, in the form of a rounded and solid tumor, was lying forward between the anterior wall of the vagina and the bladder. She complained of pressure at the part when the body was curved. The cervix was elongated, fuller and harder than natural; the os open. I placed the fingers of my left hand behind the pubis, endeavoring in this way to reach the fundus, while with the forefinger of my right hand I tried to draw the cervix downward and forward. I did not succeed, and no further manual efforts were made. Care was taken that she observed the recumbent position for a month. An examination at the sixth month satisfied her husband that the curvature had nearly disappeared, and though not during the pregnancy ever quite free from suffering, she was delivered without difficulty and recovered remarkably well.

There are two classes of cases—(1) those in which the uterus was in a normal condition when the pregnancy began, and (2) those in which the uterus was ante flexed before the pregnancy commenced.

1. *Anteflexion occurring after Pregnancy has begun.*—This is not so common a condition as the following one, but it is by no means rare. A sudden jerk, or blow, or fall, or a long-continued exertion of any kind, may displace anteriorly the gravid uterus. An accident severe enough to pro-

duce such a result very frequently has the further result of inducing an abortion; but in some instances the abortion does not happen at the time; the patient feels ill, and as the pregnancy proceeds becomes worse, and very possibly an abortion occurs a month or two later, or, under favorable circumstances, pregnancy ends at the proper time.

2. *The Antelexion precedes the Pregnancy.*—When the antelexed uterus becomes gravid, it frequently happens that it is able to expand, and to rise up out of the pelvis; and so the pregnancy proceeds, at first with more or less difficulty, but later on without difficulty. The obstacle to the elevation of the uterus in process of expansion is less than in the case of the retroflexed uterus. Taking indiscriminately one hundred cases of antelexion and one hundred cases of retroflexion it might be predicted that an abortion would certainly occur more often in the latter class of cases than in the former. The promontory of the sacrum hinders reduction of the retroflexed gravid uterus, but the symphysis pubis does not project so as materially to interfere with the elevation of the antelexed gravid uterus. Thus abortion is not so frequent a result in cases of antelexion as in cases of retroflexion. Yet in regard to *absolute* frequency of abortions antelexion stands before retroflexion. Absolute incarceration of the gravid uterus is not, for the reasons just mentioned, so liable to occur in antelexion as it is in retroflexion. But nevertheless such incarceration does sometimes occur. When the incarceration occurs it is more generally for a limited period only, the uterus either (1) rising up out of the pelvis, or (2) expelling its contents, and in either case the patient becomes relieved. Fatal incarceration, such as may occur in retroflexion, is very rare. Ulrich, however, records a remarkable instance of it. The case will be given in full in the chapter on the Vomiting of Pregnancy. In this case the condition was recognized during life, but the attempts at alteration of the position of the uterus failed. The uterus lay in this case *obliquely* across the pelvis. This oblique position appears liable to occur as the pregnancy proceeds, seeing that the oblique diameter is longer than the antero-posterior, and there is more room, therefore, in the oblique position.

The history of many cases is as follows: The uterus is antelexed in the first or second degree, with first degree of anterior rotation. Pregnancy occurs. An unusual degree of nausea is observed almost from the moment preg-

nancy begins. There is great frequency of micturition. Walking and sitting aggravate both of the latter symptoms. The patient is more or less uncomfortable in other respects. This condition persists up to the middle of the third month. Then the symptoms undergo a change—either improve, or become very much worse. If they improve, that indicates that the bend in the uterus has given way, the organ is expanding more easily, and rising up out of the pelvis. If, on the contrary, there is intensification of the symptoms, this means that incarceration is present. The incarceration is perhaps only temporary; at the end of a few days the expansion does the work required and the uterus rises upward.

In another set of cases the history is as follows: The uterus has been anteflexed for some time. It is hard, rigid, and firm in texture. Pregnancy occurs. Instantly great pain is felt; nausea is very troublesome, so also frequent micturition. The patient continues to go about; the uterus is not kept at rest; at the end of about two months abortion occurs.

In some cases the patient loses blood from time to time, the indication often of impending abortion, but not of course necessarily so.

The difficulty in cases such as above described arises from three sources—(1) The hardened, contracted condition of the uterine tissues (in chronic cases). (2) The downward pressure of the abdominal viscera. When these two difficulties are conjoined the result is more likely to be unfavorable. Experience shows that while in many cases removal of the latter source of difficulty by keeping the patient in the horizontal posture is successful in averting an impending miscarriage, there are others in which this precaution alone is insufficient. (3) A further source of difficulty in some cases is the œdematous effusion surrounding the uterus.

I first became aware of the importance of this subject about eighteen years ago. A lady who had been treated by me previously for anterior displacement became pregnant, and soon after the beginning of the third month presented all the symptoms above described. The uterus was incarcerated in the pelvis, there was considerable œdematous swelling of parts surrounding the vulva, and the uterus was jammed downward behind the symphysis pubis. The horizontal position, kept up for a week or

ten days, relieved the symptoms, and pregnancy proceeded to about eight months when the patient was delivered of a

FIG. 120.*



dead child. Since then I have seen many such cases, and have become impressed with the conviction of the extreme

* Fig. 120 represents anteversion of the gravid uterus at about the fourth month of pregnancy.

importance of ante flexion as a cause of abortion, and have obtained valuable information as to the means of preventing it.

DIAGNOSIS.

This presents little difficulty. The patient is usually known to be pregnant. The pain and distress, together with the nausea, announce that pregnancy is not proceeding normally. Unless an examination be made, it is difficult to say whether retro flexion or ante flexion be present. The position of the os uteri, which is very far back, and the presence of a dense resisting tumor (the ante flexed body of the uterus) felt through the vaginal roof, indicate the nature of the case. The uterine tumor is rounded, elastic, generally symmetrical, and usually in the middle line; but as the uterus increases in size it comes to occupy an oblique position in one of the oblique diameters in the pelvis. This oblique position was present in Ulrich's fatal case, and I have observed it in two cases. A case of extra-uterine pregnancy might present somewhat similar symptoms, but the tumor enclosing the foetus would be probably unilateral. It must be recollected that in ordinary normal pregnancy the uterine body would be, say at the end of two months, rather readily felt by the exploring finger through the vaginal roof, but it should not of course be jammed downward behind and close to the symphysis pubis. There is a perceptible interval between the uterus and the pubic bones when the gravid uterus is in a normal state at the end of two months.

In the chapter on Ante flexion and Ante version statistics are given as to the frequency of abortions due to this condition of the uterus. The repetition of abortions is a notable feature—thus four or five times in succession the abortion may occur. The success in arresting the occurrence of abortion by treating the ante flexion is one of the many arguments adducible in favor of the above views.

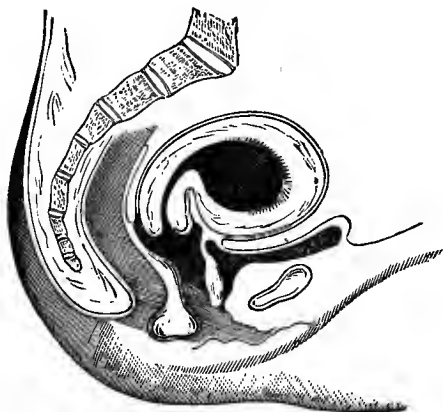
A most interesting feature in cases of ante flexion with pregnancy is the great frequency of obstinate nausea under these circumstances. It may be predicted, almost with certainty, that if a patient affected with ante flexion becomes pregnant she will suffer severely from nausea during the early part of the pregnancy. We now and then meet with cases when the patient is suffering from what is

termed uncontrollable vomiting in pregnancy. These are generally cases of the kind here alluded to—viz., cases of severe ante flexion associated with pregnancy. Not always of ante flexion, because in some cases there is retro flexion; but practically it may be said that ante flexion is chiefly responsible for these cases of severe vomiting.

The special significance of nausea in relation to pregnancy will be found fully discussed in the following chapter.

It may be mentioned that another result connected with

FIG. 121.*



abortion is the *retention of the ovum in the uterus* after its death. For instance, a patient has a miscarriage due to ante flexion: the ovum dies and the patient loses perhaps a great quantity of blood. In a certain number of these cases the ovum will remain in the uterus a considerable number of days, and the reason it does not come away is that the shape of the canal prevents it. Unless properly assisted, there occurs a considerable delay in its escape from the uterus. The difficulty results from the acutely flexed state of the organ, and the knowledge of this fact is the secret of success in the treatment of such cases of retention

* Fig. 121 represents the condition of the uterus when distended by a retained ovum or clots in a case of ante flexion.

of the ovum. The cavity of the uterus may become considerably distended by blood or clots, as shown in the annexed figure (Fig. 121). In these cases of miscarriage, if the ovum is retained, a frequent result is that it becomes putrid, and gives rise to an offensive discharge which may continue for some time. When, however, the uterus is artificially straightened, the ovum is generally easily evacuated, and the offensive discharge ceases. Such retention of part of the ovum may occur equally in ante flexion and retro flexion of the gravid uterus. With reference to the importance of this relation subsisting between retention of the ovum in early miscarriages, and flexions, I do not hesitate to say that, since my attention has been directed to the mechanism of these occurrences, I have not seen a case in which the relation described has not been most obvious. The difficulty in relieving the patient and putting an end to her various discomforts has ceased on taking measures to straighten the canal, and thus allowing the uterus to exert advantageously the proper expulsive action on its contents.

TREATMENT.

In simple cases, where the symptoms are not severe and the patient has not had an abortion, the following treatment will probably prove sufficient: The patient should be instructed to avoid all severe exertion until after the end of the fourth month; she should avoid the sitting position whenever practicable; carriage exercise only in the recumbent position; short walks to be preferred; as a rule, the patient to use a chair with a very sloping back, or the sofa; nothing tight to be worn over the abdomen; and the bowels to be carefully regulated, so as to avoid any straining effort.

In more severe cases the patient must at once take to her bed in order to have the advantage of perfect rest in the horizontal position. If relief of the symptoms does not follow very speedily—*i.e.*, within a day or two—it may be necessary to assist the elevation of the body of the uterus. This may be done best by inserting a small air-ball pessary about one and three quarter inches in diameter into the vagina, and inflating it to two inches with air. This may be left *in situ* for twenty-four hours, and then removed and reapplied if necessary. To aid in the elevation of the uterus a pillow may be placed under the pelvis for an hour

at a time, the head being only slightly raised. I have frequently employed a cradle pessary in severe cases of ante-flexion of the gravid uterus, removing it when pregnancy has reached the end of the fourth month. In several cases, this instrument having been used to remedy the ante-flexion, the patient has continued to wear it uninterruptedly up to the end of the fourth month; but I do not recommend that, in such cases, the cradle pessary should be employed in a haphazard way, or by any one not accustomed to its use.

I regard the positional treatment above described as quite essential in such cases. A remarkable proof of the adequacy of the explanation of the occurrence of severe sickness in pregnancy is afforded by the success of this positional treatment in relieving the patient: for I have records of many cases where the sickness has been relieved almost at once by mere positional treatment alone.

The very severe class of cases remains to be considered—that, namely, in which the condition of the patient is critical owing to long-continued and irrepressible vomiting. These cases present themselves almost (but not quite) without exception just before the mid-period of pregnancy. It is in this class of cases that it has been thought right to advise the induction of abortion in order to save the patient's life. The late Dr. Copeman of Norwich, a few years ago found that by dilating the cervical canal of the uterus the nausea is arrested. He had dilated the cervix as preparatory to the evacuation of the uterus; but the day after the dilatation, as the nausea had disappeared, it was not necessary to complete the process, and the patient had no more sickness. He repeated the operation in other instances with a like result—finding thus, as he believed, an important and valuable means of arresting the vomiting in these dangerous cases. A more particular account of these cases and of the deductions to be drawn from them will be found in the succeeding chapter.

A perusal of the particulars of his cases will, I believe, sustain the belief that they were cases of ante-flexion of the uterus, coupled in some instances with very marked rigidity of the cervix, and great resistance and firmness of the structures around the internal os uteri; in other words, that the uterus was either markedly ante-flexed, or that there was hypertrophy and contraction, the result of pre-existing flexion of the uterus.

The success of the procedure, which Dr. Copeman him-

self did not attempt to explain, is to be accounted for as follows: (1) These are cases, usually, of ante flexion, the os is far back, the body of the uterus low down behind the symphysis. Now it is impossible to introduce the finger—indeed, any dilating agent—into the cervical canal without drawing forward the os uteri; equally impossible to draw the os uteri forward without at the same time dislodging the uterus from its abnormal position; in other words, the procedure of dilatation of the cervix had as one of its results the rectification of the position of the uterus. (2) The actual dilatation of the cervix uteri. This dilatation, in cases where the cervix is contracted and hardened by previous disease, releases the tension of the parts, and, in fact, it does artificially what the uterus has been vainly trying to do before for itself. Experience has shown that this condition of things is liable to be met with in certain cases, and they will probably be almost invariably found to be cases where there has been marked flexion of the uterus previously, and generally cases in which there have been previous pregnancies.

Two kinds of difficulty may be met with in cases of ante flexion of the gravid uterus: (1) The position of the uterus cannot be rectified, or (2) the cervix is very hard and condensed, and hypertrophied. The two difficulties may be met with in conjunction or separate. When the condition of the patient is a critical one, it may be assumed that one or both of the difficulties described exists, and requires mechanical assistance.

1. As regards the liberation of the uterus. Carefully applied pressure will hardly ever fail in elevating the uterus, and in cases where this is impossible the method of pressure by use of an elastic, air, or water pessary in the vagina may be tried. It is to be expected that, in some cases, one or two days or more might be required to effect the reduction, the pressure being gradually increased from time to time.

2. Concurrently with the rectification of position of the uterus, or separately, or subsequently, as circumstances might indicate, the dilatation of the cervix may require to be performed. The best means of accomplishing it will be described in the next chapter on the Treatment of the Vomiting of Pregnancy.

I have in my own practice only had occasion to use dilatation of the cervix once in a case where rectification pure

and simple failed in relieving the nausea. In this case the uterus was exceedingly hard and almost cartilaginous, and the nausea persisted in spite of rectification of the ante flexion. In this case I adopted the dilatation method of Dr. Copeman and found the tissues around the internal os very unyielding, and the dilatation was effected with the greatest difficulty. The nausea became relieved, but abortion followed in this instance.

SUBSEQUENT TREATMENT.

When abortion has occurred in consequence of ante flexion of the uterus, the malady is likely to become much exaggerated afterward, unless care be taken to prevent it. The patient must be kept in the horizontal position for some days after the abortion and means taken to promote the involution of the uterus in a proper manner. If no care be taken, the uterus is very apt to settle down, as it hardens and contracts, into a condition of flexion even worse than existed before; and a repetition of abortions produces chronic hypertrophy and exaggeration of flexion, and the other usual effects of these complications. A few days after the abortion is over, and before the uterus has firmly contracted, is an excellent opportunity for moulding the organ into a better shape, and at that time a pessary may often be employed with great advantage.

CHAPTER XXVIII.

THE VOMITING OF PREGNANCY.

AUTHOR'S Explanation, and Paper on Subject in 1871.

SEVERE OR DANGEROUS VOMITING IN PREGNANCY.—Historical and Critical Inquiry into the Subject, with Summary of Observations recorded by Others—Account of Cases published—Dr. Copeman's Cases: Explanation of these—Cases observed by the Author—Aubert's Observations on Influence of Movements of Uterus in producing Nausea—General *Résumé* of the Subject.

TREATMENT OF THE VOMITING OF PREGNANCY.

The subject discussed in the present chapter is one which more usually finds a place in works on the subject of midwifery, but the close connection which appears to subsist between the presence of distortion of the uterus and the

occurrence of severe vomiting in pregnancy renders it desirable to discuss the question as a sequel to the preceding chapter, wherein the association of flexions of the uterus with pregnancy has been considered.

In a paper presented to the Obstetrical Society of London, 1871,* I ventured to offer an explanation of the cause of the vomiting of pregnancy.

Nausea and vomiting are associated with pregnancy. Nausea and vomiting are associated with disease of the uterus. Both these propositions are true. But nausea and vomiting are not *always* present in cases of pregnancy, nor are these symptoms always present in cases of uterine disease.

Looking at the question from a broad point of view, it is quite evident that the condition (whatever that may be) which gives rise to nausea and vomiting in uterine disease is *possibly* the cause of it in pregnancy.

Unquestionably, the occasional obstinacy of the symptom is equally observed in pregnancy and uterine disease. An attentive comparison of the phenomena witnessed in the two, and a close scrutiny of clinical facts, mutually throw light the one on the other.

Having frequently observed severe sickness in cases of flexion of the non-gravid uterus, and observing the occurrence of marked sickness during pregnancy in the same cases, I was led to the conclusion that the flexion of the uterus is the condition which gives rise to the severe sickness in both conditions. Carefully testing the accuracy of this conclusion by observation of cases I was induced to frame the theory that the sickness of pregnancy is due to the combined effects of the increasing distension of the uterus and an associated flexion of the organ. Facts led me to the conclusion that in cases of flexion it is the compression undergone by the uterine tissues (markedly by the nerve-fibres) at the seat of the flexion which is the cause of the nausea and sickness, both in the gravid and in the non-gravid state.

The patient generally experiences the symptom in question on first rising in bed in the morning, or while dressing. Why is this? Is it not because the body of the uterus falls a little downward in obedience to the law of gravity, thereby

* "Obst. Trans." vol. xiii.: "The Vomiting of Pregnancy: its Causes and Treatment."

producing a slight flexion and a compression of uterine tissues at the seat of the flexion? During the first three and a half months the temporary flexion is possible, because the uterus is still in the pelvis. Generally, after that time it rises out of the pelvis, and flexion decreases with the decrease of nausea. Is it not the fact that, for the most part, the liability to nausea and vomiting ceases at precisely this period? It is also a fact, which will be confirmed by all who make the experiment, that, in ordinary slight cases of nausea and vomiting, by ordering the patient to remain absolutely in the horizontal posture the disturbance ceases.

Since the publication of my original paper in 1871 the subject has much occupied my attention, and many new facts have been recorded by various observers. I propose now to consider the subject as it stands at the present time, giving an account of the principal recorded facts bearing on the subject.

The principal interest attaches to those cases in which the vomiting seriously endangers life; and it is therefore desirable that the facts relating to such cases should be carefully considered.

SEVERE OR DANGEROUS VOMITING IN PREGNANCY.

A tendency to nausea and vomiting have been from time immemorial associated with the existence of pregnancy—so much so, indeed, that the presence of nausea and sickness have come to be regarded as a sign of the existence of pregnancy. In a mild form nausea and vomiting are rather common in the early months of pregnancy; but as many cases occur in which the symptom is absolutely wanting, it cannot be regarded as essential to pregnancy. As a rule, the degree of nausea or vomiting observed is not severe, only producing inconvenience; but in a few cases it is exceedingly severe, and becomes dangerous, (1) because of the exhausting effect of the repeated efforts of vomiting, and (2), because of the starvation it produces. The dangerous cases are those in which the vomiting is uncontrollable, and in which it continues for weeks or months.

While, therefore, as a rule the sickness of pregnancy is not a matter calling for serious attention, the exceptional cases just alluded to, where the malady is so serious as to imperil life, have been the subject of much attention; for in not a few instances death has actually occurred as the result of severe uncontrollable vomiting in pregnancy.

Respecting the very severe cases of vomiting in pregnancy, it is necessary to state, in the first instance, that in the large majority of cases the records of autopsies have thrown but little light on the cause of the excessive vomiting which destroyed the patient. In some rare instances lesions of other organs have been encountered, presumably in some measure explaining the sickness; in some cases the uterus was in an abnormal condition; but in the large majority of instances no lesion of any kind was found.

A good account of the published literature of the subject was given by Anquetin in the year 1865.* More recently† Dr. McClintock has written an essay summarizing the principal known facts relating to the subject.

1. It has been shown that in some of the few fatal cases in which autopsies have been made the fatal nausea was *probably due to lesion of some other organ than the uterus.*

Under this head may be mentioned—a case recorded by Valleix where chronic gastritis was found to be present (Query—Was the gastritis the result of the vomiting?); a case by Taurin, of redness and softening of the stomach; cases by Dubois, Chomel, and Sandras, of similar character; a case by Depaul, where cancer of the pylorus was found *post mortem*; a case by Pipelet, of epigastric hernia; a case by Lanceraux, where Cæsarean section was performed, and after death atrophy of the muscular system and of celluloadipose tissues was found to exist; a case by Trousseau, where scirrhus induration near pylorus was found after death; a case by Schutbach, where a tumor the size of an egg, near the pylorus, was found in a state of ulceration after death (these cases are quoted by Anquetin). In addition to the foregoing, Anquetin mentions cases of tubercle of lungs (Schilachigla), tubercle of brain (Rayer and Depaul), alterations of mesenteric glands (Sandras), of glands of epigastrium (Blot), fatty degeneration of liver (Chomel), biliary calculi (Taurin), redness of semilunar ganglia of solar plexus (Lobstein), congestion of meninges (Sandras). Burns‡ gives a case where a biliary calculus was found to be impacted. Robert Lee§ gives a case where bronchitis and fever had occurred before the vomiting set in.

* "Rev. Méd." (1865), pp. 205, *et seq.*

† *Dubl. Med. Journ.*, May, 1873.

‡ "Midwifery," p. 265.

§ "Clin. Med.," p. 107.

2. Next we come to cases where *the uterus was found on post-mortem examination to present something abnormal.*

Dance* observed two fatal cases—I. In the first, death occurred in six weeks; there was found to be pus between the uterus and placenta, and pseudo-membranous concretions between the uterus and decidua; II. in the second, death in twelve weeks; the uterus was found beginning to rise out of the pelvis; its walls were scarcely one and a half lines thick, unusually soft, deeply engorged, and of a violet-red color. III. In a case by Chomel pus was found on the external surface of the decidua.

3. The next category of cases is that in which *some abnormal condition of the uterus was discovered during life.* I have collected a considerable number of cases, particulars of which are subjoined, the facts of which have a bearing on the present discussion: but there are probably others on record which have escaped my notice. One of the most important cases is the following:

I. *Case of Vomiting in Pregnancy caused by Retroversion of the Uterus.*—Brian records† a most interesting case, for reference to which I was originally indebted to Dr. Barnes, and of which the following is a slightly abbreviated account: X., æt. 25. First pregnancy, six years ago, ended normally; second ended favorably, three years ago, but there was some nausea and slight pains. Soon after recovering, sustained accident, being thrown out of a carriage, and very much frightened. Leucorrhœa then noticed and continued; has had also digestive troubles. Third pregnancy commenced in March, 1856. Vomiting began following month, and increased in severity. In May she kept to her bed. Intolerable gastralgia, constipation, insatiable thirst, no kind of nourishment retainable, next observed; also painful clonic spasms of limbs, profound exhaustion and depression, and sleeplessness. On May 2 first seen by Brian, who was implored to procure abortion. Nothing was then done, but Professor Moreau saw the patient, and thought the vomiting would cease as the womb rose out of the pelvis. Case now fell under other treatment. On June 9 Brian again in charge of the case, the patient's condition much aggravated; he insisted on a careful examination. No abdominal tumor to be felt, as it should easily have been in the patient's

* *Répert. Gen. d'Anat. et de Physiolog.*

† *Gaz. Hebdomad.*, July 18, 1856.

emaciated state. On June 4 Professor Moreau again saw her, and by vaginal examination discovered existence of incomplete retroversion, fundus deeply lodged in the cavity of the pelvis. "He ascertained that the uterus was imprisoned in the curvature of the sacrum and confined on all sides by the osseous *cul de sac*, without being able to rise up above the sacral promontory. As soon as he was aware of these circumstances, by a skilful manœuvre he disengaged the fundus uteri from its abnormal position, causing it to ascend, and thus bringing it into the longitudinal axis of the abdomen." After this operation the patient felt immediately relieved, the vomiting ceased, and complete recovery took place.

II. Stolz records a case in which the uterus was retroverted, and the excessive vomiting was at once suspended on replacing the uterus. Eventually abortion was induced.

III. In a case by Depaul, at seventh month, it was found that the internal os uteri was completely obliterated. Incisions were performed, and the child born alive.

IV. Clay* records a case of sixth pregnancy, æt. 40, at seventh month. He determined to induce labor. Introducing the finger, he found the uterine cervix so sensitive that the slightest touch produced vomiting. Finding this to be the case, he resolved to try the effects of rest. Patient was kept in bed, and in twenty-four hours could take food. Persistence in the rest treatment produced a perfect cure.

The following is a very important and interesting case recorded by Ulrich,† for reference to which I was originally indebted to Dr. Barnes, and which, owing to its being the first recorded case of the kind, is here given in full:

V. *Anteflexion of the Gravid Uterus; severe Nausea; Death.*—Frau Freudenburg, thirty-four years of age, had been healthy, and menstruated regularly up to the date of her marriage on April 1. Since that date coitus had caused her on each occasion a painful feeling in the abdomen, which soon became so great that she at last resisted all attempts at intercourse on the part of her husband. On April 30 the menses appeared as usual; during May she continued in her usual health. At the end of May the menses did not appear. On June 1, without being in any other way unwell, she was attacked with frequent vomiting.

* *Gaz. Hebdomad.*, 1857.

† "*Monatsschrift für Geburtsk.*" 1858.

At first a part only of the food she took was returned, but very soon the evil increased to such an extent that all food taken into the stomach was vomited, solids as well as fluids, and when the stomach was empty a nauseous sensation remained for a long time. At this period she was also attacked with pains in the epigastrium, which came on in acute paroxysms. By medical advice leeches and blisters were applied to the epigastrium, and all sorts of narcotics and antispasmodics were given internally, without avail. The patient continued vomiting from day to day, and the pains robbed her of her night's rest, and reduced her to a weak, nervous condition. She resolved, on July 8, to seek relief in St. Hedwig's Hospital. Her condition on admission was the following: Bodily frame weak, muscles relaxed and flabby, atrophy of the subcutaneous fat, on the front of the body several scattered pigmentary spots, pulse small and frequent always, no tenderness of subjacent organs by light pressure on the abdomen; on vaginal examination so high that the posterior lip could with difficulty be reached, the os, rounded and with smooth surface, could be felt in the left posterior portion of the pelvis. The enlarged and doubled-up body of the uterus could be felt lying behind the right horizontal ramus of the pubes. By the aid of gentle pressure with the other hand through the abdominal wall the uterus was found to be markedly anteflexed. The position of the flexion could be distinctly felt through the roof of the vagina. The breasts were enlarged, and the areolæ darkened. Menstruation had ceased since the end of April. During the first day of her stay in hospital the patient sat up in bed in a bent-over position; she was tormented with continuous nausea and vomiting, all food was returned as soon as swallowed, and large quantities of tenacious mucus were brought up from the empty stomach; rest and ease were impossible, owing to the complete loss of sleep, fearful thirst, and obstinate constipation. The diagnosis was asthenia from the vomiting of pregnancy, but the false position of the uterus must be regarded as the essential cause of the evils, and its further expansion would render matters worse, and produce greater irritation of the uterine nerves; therefore an attempt must be made manually to replace the dislocated uterus. Many attempts were made, but they all proved unsuccessful; as the strength of the patient became more exhausted, so was the indication greater for the artificial production of abortion. However,

I did not resolve on this until I had made a last trial with the various well-known internal remedies, of which tr. iodi is most recommended. With the consent of her husband, accordingly, as a last resource, three to four drops of tr. iodi were administered daily. After forty hours of this treatment, the repugnance of the patient to this treatment became so great, that only by repeated persuasions could she be induced to continue it. As all was useless, on July 24, with the consent of her husband, an attempt was made to introduce the uterine sound, but failed, and again after two days; this was partly owing to the restless movements of the patient, and partly owing to the high position of the cervix uteri; the sound was only just able to be introduced into the cervix uteri.

I made a third attempt on July 31, in consultation with Dr. Brandt, and managed at last to introduce the sound as far as the bend; to have pressed it on further would have been impossible, owing to the danger of wounding the patient. Unfortunately, at this time the strength of the patient was so far exhausted, that even in the case of the complete emptying of the uterus an unfavorable termination was probably to be expected. Up to August 2 little change occurred in the health of the patient; then the vomiting ceased suddenly, whilst at the same time the intellect became disturbed, light delirium alternating with deep drowsiness, the pupils were fixed and dilated, and convergent strabismus set in, occasioned by the paralysis of the external rectus. On August 4 she died.

No further vaginal examination had been made after the last introduction of the sound. In laying out the body for *post-mortem* examination twenty-four hours after death, the foetus fell out of the vagina, the placenta lay within the os and was brought out by light traction on the umbilical cord. The *post mortem* revealed the following: On the surface of the hemispheres underneath the arachnoid were a small number of jelly-like serous exudations, free from blood-staining; the substance of the brain was extraordinarily anæmic; at the base of the brain, around the origin of the sixth nerve, there was no evidence of anything abnormal. The chest-organs were healthy, the lungs notably dry, the heart small and firmly contracted. In the intestinal canal, liver, and spleen, no pathological changes were found. The body and fundus of the uterus, considerably enlarged, lay directly behind the right horizontal ramus of

the pubes, much anteflexed; the length of the body of the uterus was five and a quarter inches, the position of the flexion was three inches from the os. On the under surface the walls of the uterus were soft and flabby; on the upper surface they were much condensed and very firm. On opening the cavity of the uterus the placenta was seen to have had its attachments to the lowest segment of the uterus, and thus had harbored the fœtus above. Above the seat of flexion in the upper segment of the uterus no free cavity existed; the small interval between the rigid walls of the uterus was filled with a mass like a placenta firmly adherent everywhere. The fœtus was five inches long, the umbilical cord six and a half inches.

It appears evident that pregnancy had existed for nearly four months, and that after conception the menses appeared on one occasion; and it is my decided opinion that the bending of the uterus, and consequent hindrance to the regular expansion and growth of the uterus, was the influence producing the obstinate vomiting.

VI. Dr. Tyler Smith* recorded a case in which nausea set in early in the pregnancy. When the patient was two months pregnant there was incessant vomiting and extreme emaciation. She was kept alive by teaspoonful doses of beef-tea every half hour, and injections of beef-tea. When four months pregnant, the uterus could be felt above the pelvic brim. Abortion set in spontaneously at five months. The patient did well for three weeks, and then rapid phthisis set in.

Dr. Tyler Smith believed that "an almost poisonous influence seems to be exerted by the gravid uterus in some constitutions." Also that nausea is "probably cured by the distension and evolution of the dense structure of the uterus after impregnation, or by the pelvic irritation caused by the gravid uterus before it emerges from the brim, or from both these causes."†

Ulcerations of the os uteri have been considered to be the cause of the excessive vomiting by several authorities, including Dr. Henry Bennet; and scattered through medical literature will be found cases in which relief from sickness has been to a certain extent obtained by topical applications to the os uteri.

Severe Nausea associated with Anteflexion.—The following

* "Obst. Trans.," vol. i,

† "Manual of Obstetrics," p. 99.

case, observed in consultation with Dr. Royston, was quoted in my original paper: *

VII. The lady, æt. 24, quite recently married, had menstruated last October 14, 1870, a very slight discharge being observed on November 3. Since November 3 there had been occasional sickness, and from the end of January up to February 21, when I first saw her with Dr. Royston, the sickness had been severe. Dr. Royston informed me that the lady was pregnant, that when first called in to see her, about a fortnight before, the sickness was most severe, and no article of food could be retained. On hearing Dr. Royston's account of the symptoms I expressed my opinion that the uterus was acutely anteflexed, that the fundus of the uterus would be found to be low down, jammed in the pelvis, and that this was the explanation of the symptoms. On proceeding to make an examination my opinion was found to be exactly verified: the os uteri lay far back, the roof of the vagina was projected downward and backward by the enlarged and anteverted and -flexed uterus, and the body of the uterus was scarcely to be felt at all through the abdominal wall, although the pregnancy was probably of about four months' duration.

The patient had, in my opinion, suffered from anteflexion before marriage, and, pregnancy having occurred, the uterus had gone on growing and expanding without losing its vicious shape, and, indeed, with an increasing aggravation of that vicious shape, up to the time of my seeing her.

The evidence that anteflexion existed prior to marriage was as follows: The patient was never able to dance without discomfort. She had, six years prior to marriage, taken for six months violent horse exercise, to which she was previously unaccustomed, and this was followed by losses similar to those of the menstrual periods, and by diarrhœa. On another occasion, a year later, horse exercise again brought on similar symptoms.

In this case the advice given was that the patient should remain altogether in the horizontal position in order to allow the expanding uterus a better chance of escaping from the pelvis, and that the bowels should be kept regularly open. The result of this treatment was that the chief symptom—the nausea—underwent at once a most mate-

* "Obst. Trans.," vol. xiii.

rial alleviation, soon disappeared, and delivery at full term occurred.

VIII. Dr. Æneas Munro* in 1872, shortly after the appearance of my paper, published a case which, to use his own words, "in a very remarkable manner bears out to a certain extent what Dr. Hewitt has said on the matter." The case was that of a primipara, æt. 21. When seen first, in the third month of pregnancy, the vomiting had become intense. The uterus was found acutely anteflexed and quite fixed. An attempt to push the uterus up failed. The sound passed in about five and a half inches. Some days later, no relief being obtained, and symptoms being very urgent, premature labor was induced. Recovery complete. Dr. Munro in one place states that there was no jamming of the uterus in the pelvis; but in another he says that he found it so fixed in its abnormal position that it could not be moved upward.

Dr. McClintock,† in an essay on the subject published after the appearance of my paper in the "Obstetrical Transactions," gives a collection of cases of severe vomiting in which premature labor was induced to relieve the patient. He confesses that "we are yet very much in the dark" as regards the etiology of the sickness. Dr. McClintock declined in his paper to accept the explanation which I had offered as to the influence of flexion of the uterus.

IX. Dr. McClintock‡ gives a case, that of a primipara æt. 24, who at the end of two months was found suffering severely from sickness. "The uterine tumor could not be distinguished above the pubes; but *per vaginam* the body of the organ was felt enlarged and slightly anteverted, as is often found to be the case at this period of utero-gestation." Ten days later the patient was in a highly dangerous state, and abortion was induced.

Dr. McClintock accepts the dictum of Dr. Barnes that the normal position of the uterus in early pregnancy is anteversion, and evidently considers that in the above case there was nothing abnormal in the condition of the uterus. It is probable, however, from the facts related that the body of the uterus was really abnormally low in the pelvis.

One of the arguments used by Dr. McClintock and some others, which seem to them to tell against the influence of

* *Glasg. Med. Journ.*, Aug., 1872.

† *Dub. Med. Journ.*, 1873.

‡ *Ibid.*, May, 1873.

flexion and displacement of the uterus in producing the nausea of pregnancy, is that in cases of retroflexion of the gravid uterus sickness is not always present. True; but the same holds good respecting retroflexion of the non-gravid uterus. Sickness is not a constant symptom in cases of the latter kind, but I have known most severe and distressing sickness to be produced by retroflexion in the non-gravid state which has been almost magically relieved by elevating the fundus, thus showing in the most indisputable manner that the sickness was due to the flexion. So again with ante flexion: neither in the gravid nor in the non-gravid state is sickness an invariable symptom, but this does not prove that the ante flexion is not responsible for the sickness when it does occur.

A very important contribution to the pathology of the subject is that of the late Dr. Copeman, of Norwich. In 1875 Dr. Copeman published * a paper in which he related three cases, of which the following particulars are given in brief:

X. A patient, six months pregnant, so reduced by sickness that fears were entertained for her safety. It was resolved to induce premature labor. The cervix was dilated with the finger as a preparatory step. An hour later, when further measures were about to be taken, the patient was so much better that it was thought best to wait. From that time improvement set in, there was no return of sickness, and delivery at full term occurred.

Dr. Copeman was struck by this case, and "wondered whether the relief could have been effected by his having dilated the os uteri and thus removed any undue tension that might be producing sympathetic irritation."

XI. In a second case (where "there was some degree of anteversion") the same procedure had a like good effect.

XII. In a third case equally good effects, in relieving a patient from severe sickness, followed the dilatation of the os uteri with the finger.

This paper of Dr. Copeman's attracted my attention, and in a communication to the *British Medical Journal* a fortnight after,† in speaking of Dr. Copeman's cases, I stated

* *Brit. Med. Journ.*, May 15, 1875. Dr. Ely Smith (*Brit. Med. Journ.*, Aug. 21, 1875) says that Dubois first noticed this effect of dilating os in arresting vomiting.

† *Ibid.*, May 29, 1875.

that they offered a strong confirmation of the truth of the doctrines I had previously expressed on the subject. The explanation of Dr. Copeman's success I held to be that the operation of dilating the os uteri was itself the means of righting the uterus, for the os must have been pulled forward in order to dilate it, and this would have the effect of tilting the body of the uterus upward, and thus (assuming that they were cases of anteversion: Dr. Copeman himself stated that one was) the operation reduced the displacement. I further added, "It may be said, How do you explain the cases in which the vomiting persists as late as the eighth month, which was the fact in Dr. Copeman's third case? The answer is, that where there has been an acute flexion in the early part of the pregnancy, as the uterus enlarges (if abortion does not occur) the flexion is in most cases abolished, and the effect of this is, that the sickness generally disappears under such circumstances. But *the tissues of the uterus at the seat of the flexion are sometimes left in a diseased state, being stiffened and unduly resistant, and thus the irritation is kept up.* Dr. Copeman's treatment would undoubtedly tend to remove this stiffening and constraint."

Dr. Copeman in a further paper* comments on various opinions elicited by his first paper, and says that his own opinions were not sufficiently matured to enable him to give any positive explanation of the causes of the sickness, but he is "inclined to believe that in such cases there is always some irritating condition present, which induces a strain upon the neck of the uterus, or perhaps also on other parts of the uterus."

In this his second paper Dr. Copeman relates a case which most curiously corroborates the views I had expressed as to displacement being the cause of the sickness:

XIII. A lady in her second pregnancy, five months advanced, was very sick; she had frontal neuralgia also. She had for some weeks taken violent exercise. The sickness and the neuralgia continued. The abdomen did not appear to enlarge as much as usual. On examination *per vaginam* the head was found low down in front, and the os uteri corresponding with the promontory of the sacrum. "It seemed to me," says Dr. Copeman, "that the uterus was anteverted so as to allow the head to be felt below the level of the os

* *Brit. Med. Journ.*, Nov., 1875,

uteri." Dr. Copeman, by gentle, continued pressure, raised the protruding portion of the uterus out of the lower pelvis and restored the os uteri to a more natural position, after which he prognosticated no further vomiting would occur. And, in fact, so it happened—the cure was complete.

In this case, therefore, the nausea was cured by *reducing the uterus to its proper position*, Dr. Copeman not having employed any dilatation of the os as in the other cases, and it offers a remarkable illustration of the truth of the critical remarks which I had before offered on the *modus operandi* of Dr. Copeman's procedure. In fact, the patient was cured without dilatation of the os uteri at all.

XIV. *Case by Dr. Copeman.**—Pregnant eleven weeks; severe and uncontrollable vomiting lately. Fundus tender on pressure; and displaced forward. The displacement was rectified and bowels opened. Sickness much less next day, but as it continued slightly os was dilated with finger. Cure.

XV. *Case by Dr. Copeman.*†—Six weeks pregnant; three weeks sickness. Position of uterus thought to be normal; posterior lip hard and unyielding; os gradually dilated, and, after two days' rest, cure.

XVI. *Case by Dr. Copeman.*‡—Six weeks pregnant; nearly incessant sickness two weeks. After dilatation of os by finger as far as os internum, vomiting ceased.

I subjoin some published cases in which dilatation of the os uteri after Dr. Copeman's plan was followed.

XVII. *Case by Mr. Atkinson*§ of Halifax.—Incessant vomiting at six months, in a multipara. Vomiting ceased after digital dilatation of os uteri.

XVIII. *Case by Dr. Minot*|| of Boston.—A sponge tent introduced into the cervix allayed the vomiting.

XIX. *Case by Dr. Dukes.*¶—Patient, æt. 33. Has had five children and five miscarriages. The previous pregnancy, after eight months' incessant vomiting, was relieved by induction of premature labor. Now pregnant two months. Remedies now failing, the os was dilated digitally, the tissue being found very hard and cartilaginous. Vomiting was at once relieved and soon ceased altogether.

* *Brit. Med. Journ.*, Sept., 1878.

† *Ibid.*, June, 1879.

‡ *Ibid.*, Sept., 1876.

§ *Ibid.*, May, 1879.

|| *Ibid.*, Nov. 6, 1875.

¶ *Ibid.*, Feb. 23, 1878.

XX. *Case by Dr. Gooch* of Eton.*—Mother of two children, pregnant eight months. Incessant vomiting for two months; lying on back produced the vomiting. The os uteri found hot and painful. Dilatation by finger and separation of membranes round os; escape of much offensive discharge; relief of vomiting; pregnancy went to full term.

XXI and XXII. *Two Cases by Dr. L. Rosenthal.* †—Cure by digital dilatation of os—one patient in second pregnancy, the other a primipara.

XXIII. *Case reported by Mr. J. T. Fry‡ of Swansea.*—The cervix, and especially the posterior lip, was hard and gristly. Neither the finger nor tangle tent could be introduced. A long and slightly anterior curved throat forceps was used, and gently but with some force dilated; the os was thus dilated. The effect immediate in removal of the vomiting. The patient had been obliged to have premature labor induced in previous pregnancy.

XXIV. *Case by Dr. Murillo§ of Santiago.*—Primipara, æt. 22, in third month of pregnancy; sickness severe. On four occasions, at intervals of a day or two, the finger was introduced into the softened cervix as far as internal os. After a week sickness ceased.

The following is a series of cases which have been observed by myself during the last ten years, illustrative of the question now under consideration, and of which I have preserved notes; but I have seen others of a similar kind, records of which have not been kept.

XXV. *Retroflexion of the Gravid Uterus causing Severe Nausea.*—The subject of this case, now published for the first time was the wife of a medical man. She consulted me first in January, 1869, for severe pain in the chest and heart. The uterus was found to be retroflexed, and the last catamenial period was on December 5, about seven weeks previously. On February 20 a second omission of menstruation was noted. She was then suffering much from sickness, and pregnancy was considered to be present. This pregnancy ended favorably; but I saw nothing of the patient further until the year 1872 (January 24). Patient now 26; has had three children, two of these since I last saw her; last child is a little over three years old.

* *Brit. Med. Journ.*, Sept. 28, 1878. † *Ibid.*, Aug., 1879.

‡ *Ibid.*, March 13, 1880.

§ *Lond. Med. Record*, Feb. 15, 1878.

Patient now six weeks pregnant. She is suffering from severe sickness. The uterus is found to be retroflexed. A ring pessary (Hodge-shaped) was applied, and she went home. On February 22 I was sent for and found her extremely ill, suffering from intense sickness. The sickness had induced severe jaundice and an extreme depression and feeling of collapse. The ring pessary had ceased to do its work properly, being too small for the increased size of the uterus, and the organ was retroverted over the top of the pessary. A larger instrument was applied. The patient, who was in a most alarming state of depression, very speedily felt better, and she visited me at my house on April 2, also on April 17; but on April 19 I was summoned to see her again with a repetition of the same severe symptoms, the vomiting having returned in a most intense degree. Again I found the mechanism of the support at fault; the exertion of coming to my house had been too much, and the uterus was still displaced. Relief followed its readjustment; but great difficulty was found in retaining the uterus in its place (though it was easy enough to replace it) owing to the indisposition of the patient to keep quiet. Whenever the uterus was in proper position the symptoms abated as if by magic; but recurred as speedily when the fundus succeeded in eluding the action of the pessary. Finally, an end was put to the case by the occurrence of premature labor on June 26, the patient being then a little over six months advanced in pregnancy.

The husband of this lady informed me, in answer to a letter in May, 1876, that since that time she slowly recovered her strength, but that every now and then she is liable to attacks of "biliary colic." She does not, he states, now suffer from the retroflexion. She has been pregnant once since, but did not go her full time owing, he believes, to anxiety and fatigue in nursing her sick children. He remarks, as a curious circumstance, that she has only been sick when pregnant with girls.

The case is a most interesting one, the history of retroflexion as affecting the pregnancies being, in regard to many of the details, known to me from personal observation. I saw her suffering from sickness at the beginning of her second pregnancy, and relieved her from the displacement so that she went her full time. Further, I saw her in her fourth pregnancy again affected with retroflexion, and again suffering from sickness, but on this occasion in a

much more severe form. On three or four distinct occasions during this fourth pregnancy the sickness actually threatened to destroy her, but each time it was arrested by the raising of the uterus from its retroflexed position. The repetition of the disorder, however, ended in premature labor at about six and a half months; but had the patient been more careful and less wilful, it is probable that pregnancy would have gone on to full term.

XXVI. *Nausea due to Antelexion of the Gravid Uterus.*—A. M., æt. 21, patient at University College Hospital, 1874. The notes by Dr. E. M. Skerritt. Married two and a half years, no children, no miscarriages. Menstruation never regular, intervals occasionally three or four months, and always scanty and very painful. She has not menstruated for the last four months, the last time after a previous interval of four months. The present illness for the last four months; gradually the symptoms have become worse. For the last three weeks she has been confined to her bed. Her chief complaint is of pain of an aching or griping character at the lower part of the abdomen, much more intense of late, and accompanied by nausea and vomiting occurring both on getting up and during the day. Expression painful, areolæ enlarged, distinct brown pigmentation, areolar glands enlarged; abdomen not distended, resonant, more resistance to pressure on left side. Pain referred to umbilicus, described as "cutting," with occasional exacerbations. General abdominal tenderness. On deep pressure over pubes a tumor is felt rather far back, giving impression of being the top of a tumor rising up from the pelvis, with a smooth rounded upper surface, two or three inches wide, flattened from before backward, and very tender. Bladder had been previously emptied. Os uteri found to be very high up and rather far back. In front of it can be felt what seems to be a considerable swelling, extending laterally, firm, smooth, rounded, and very tender. Such was the state on admission. The vomiting continued at intervals for a few days, the pain also, the tumor felt above pubes slowly increasing in size. On March 15 Mr. Rigden, the resident medical officer, examined her, and expressed his belief that the tumor was the antelexed uterus inclined more to the left side than right. On March 18 the tumor had risen higher, reaching now to within two inches of the umbilicus. The vomiting and retching still occasionally severe. Placental bruit

heard above right Poupart's ligament. On March 19 I was requested to see the patient for the first time. I noted that the condition of the breasts alone sufficed to indicate existence of pregnancy. The tumor above the pubes is of the shape and size of a four months' gravid uterus. The os and cervix are high up and far back, but not changed in regard to softness in the way usually met with in pregnancy. The body of the uterus not now to be felt through vaginal roof. I expressed my opinion that the patient was certainly pregnant; that the previous observations made by Mr. Rigden and others left no doubt that the uterus had been up to quite recently anteflexed, and that the enlarged uterus had now escaped from the pelvis.

March 20.—No vomiting or retching last night, no pain, no vomiting this morning.

March 21.—Pain latter part of night, felt very sick before breakfast, and on taking food vomited at once. Tumor still tender. Says that as long as she lies still there is no nausea, but that it occurs on moving in bed.

March 23.—Slight nausea when she sits up in bed early in the morning. Free from nausea now as a rule.

March 24.—Nausea still a little; vomited at teatime.

March 28.—Was sick on first sitting up in bed this morning; not sick since, though she has felt so. Not sick yesterday, but had nausea as before. Got up for first time to-day. Complains of occasional shooting pain in abdomen.

March 30.—Patient has not vomited since 28th, though she feels nausea at first sitting up. The patient left the hospital to-day convalescent.

XXVII. *Retroflexion of Gravid Uterus; Severe Nausea.*—

Mrs. —, æt. —, has had three children; suffered from severe sickness in all the pregnancies. Is now two and a half months pregnant, and suffering from severe sickness. The os is found far forward, the uterus much retroflexed. Ordered to lie on the face. Report later on states that the sickness was relieved at once; she had it slightly up to four months, when it absolutely ceased. She was delivered safely at full time.

XXVIII. *Anteflexion of Gravid Uterus; Severe Nausea.*—

Mrs. —, æt. 33, has had eight children and three miscarriages. Now three and a half months pregnant; always suffers severely from sickness during pregnancy, together with intense mental depression during the first half of preg-

nancy, and during the latter half from swelling of the legs, varicose veins, and general distress. On this occasion tents have been introduced to procure abortion and relieve the sickness, but ineffectually. On examination the uterus is found to be anteflexed, the os uteri swollen, the anterior wall of cervix thin. Rest was ordered. Further history not known.

I have one case to record in which dilatation was had recourse to:

XXIX. Mrs. —, æt. 33, multipara. Very severe sickness arising from anteflexed uterus, with great hypertrophy and hardening of cervix and os. At the seventh week of pregnancy, death threatened by continued sickness, although the sickness was at first relieved by use of a pessary. Cervix dilated by metallic dilator, resistance to dilatation very great. Following day relief, but abortion occurred on second day after. Patient died a little over a fortnight later from exhaustion.

XXX. *Anteflexion of Gravid Uterus ; Severe Nausea.*—Mrs. —, æt. 34, has had four children, now pregnant for fifth time. Last child four years ago. Is pregnant three months. Her expression was, "Can you relieve me of the constant sickness?" On examination it is found that the uterus is anteflexed, and the body is quite low down in front while the os is far back, the uterus being thus jammed downward behind the symphysis pubis. The patient was ordered to remain in bed for a week, and to lie on the sofa for three weeks afterward. Food to be given every hour in small quantities. A fortnight after reported to be much better, sickness hardly more than once a day. A month later, able to move about easily without sickness. Visited me, when eight months pregnant, quite well.

The cases which have been recorded in the preceding pages convey sufficient proof of the great efficacy—it may be almost said of the *complete* efficacy—of certain mechanical procedures at the os and cervix uteri in relieving the sickness of pregnancy in its severest form. I think there can be no doubt that the phenomena recorded are thoroughly explained by adopting the view that in these cases the tissues round the internal os uteri are prevented undergoing proper expansion. This impediment to expansion is either an actually present flexion of the uterus or a contraction and condensation of these tissues, the result of a previously existing flexion.

It is a noteworthy fact that in some of the cases recorded the cervix was found so hardened and resistant that very great difficulty was found in expanding it. Cases of this kind were always multiparæ, and the inference is natural that only in multiparæ is it likely that this inordinate resistance to mechanical *artificial* expansion will be met with.

Dr. Aubert* in his essay, "Influence of the Movements of the Uterus on the Vomiting of Pregnancy," describes a case where during digital examination the attempt to push the uterus to one side by the finger produced immediately nausea, which would have ended in vomiting had he persisted. The patient was, as afterward appeared, in the second month of pregnancy. A second examination, made at the end of the fifth month, showed that lateral pressure produced nausea, but less severe than on the former occasion. Aubert discusses the subject of this provocation of nausea as a diagnostic measure in the early months of pregnancy. He cites Gueniot, who gives cases where rest in bed appeared in some cases to arrest the vomiting of pregnancy. He notes also that Stolz found pressing the uterus *upward* did not give rise to vomiting. Aubert observed vomiting in 17 out of 37 primiparæ, while of 17 multiparæ only 4 had vomiting. Gueniot in 51 *severe* cases had 12 primiparæ and 39 multiparæ. In the discussion following Dr. Aubert's paper it was stated by M. Icard that in certain intractable cases vomiting, having lasted three or four months, had disappeared on rectifying the displacement found to exist on digital examination. M. Chatin had seen many cases where the vomiting ceased on altering the position of the uterus when displaced.

XXXI. In a case by Prof. Tarnier† of Paris, a multipara, three months pregnant, had incessant vomiting, which was allayed by plugging the vagina with wadding, thus preventing, as he thought, the uterus from moving about and being shaken.

GENERAL COMMENTARY.

Some writers, as Dr. Barnes, consider the vomiting of pregnancy, in severe cases, due to tension or stretching of the uterine fibres. This may be in part the cause. For it seems likely that irritation might be produced by an undue

* *Lyon Médic.*, Oct., 1871, p. 431.

† *Journ. de Méd. et Chir.* and *Brit. Med. Journ.*, Aug. 28, 1875.

degree of such stretching. But, supposing flexion to be present, this would be likely to give rise to undue stretching and tension of the uterine fibres. While undue compression is present on the concave side of the bend, there would be increased tension and stretching on the convex side. To those, therefore, who consider the tension theory the best, I would point out that in the flexed uterus while undergoing the process of expansion such tension will be greatly increased and irritation arising therefrom considerably aggravated. My own impression, however, is that compression is the particular and tangible irritating element in such cases. The very decided effects produced in some of Dr. Copeman's cases by dilating the cervix illustrate the efficacy of removal of condensation and tension around the internal os uteri in relieving the sickness; and Dr. Copeman's cases offer evidence of the most convincing character in this direction.

Where vomiting persists to the latter months of pregnancy, the condensation at the internal os has not been entirely removed by the unfolding and expansion of the uterus (see p. 372). The structures round the internal os uteri are not fully dilated up to quite the end of pregnancy in primiparæ, and thus, although the uterus may have lost its flexion, it by no means follows that the nervous filaments around the internal os are relieved of condensation, tension, and pressure at the same moment that the flexion is relieved. When the flexion is not of long standing, by the fifth month the uterus will have become relieved either by miscarriage or by unfolding. But if the cervical tissues are much condensed by long-standing flexion the arrival of mid-pregnancy may not give the expected relief.

Dr. Aveling's remarks on the subject of the nausea of pregnancy* are as follows:

Vomiting during Gestation.—This troublesome and occasionally dangerous disorder has undoubted relations to posture. It has the name of morning sickness from the fact that it appears when the patient leaves her bed and assumes the erect posture. It is evidently reflex in its character, and is probably produced by hypostatic hyperæmy and hyperæsthesia of the uterus. Certain it is that all obstetricians recommend the recumbent position for its re-

* On Influence of Posture on Women. *Obst. Jour.*, Feb., 1877 (No. 47), p. 722.

lief, and often with great success. But Dr. Clay of Manchester goes further than this, and, believing gestational sickness to be dependent upon congestion and tenderness of the cervix uteri, advises a position of the body calculated to relieve the os and cervix from pressure against the pelvic viscera, best accomplished by lying on the back with the hips raised and head low. . . . Displacements of the uterus have been suggested as producing vomiting during gestation, and this is not unlikely, for mechanical hyperemia is often caused by them, and it would have the same effect as hypostatic hyperemia upon the uterine nerves."

As bearing on the discussion of the present question, it must be recollected that until recently it was not generally known or understood that antelexion of the uterus in the non-gravid state is a common affection, nor that antelexion of the gravid uterus is common. In the various text-books on obstetrics, anteversion of the gravid uterus is not even mentioned as a possible occurrence. This observation does not apply to some of the text-books published on the Continent. One of them, at all events (M. Cazeaux), alludes to it. I myself was not aware of the possibility of its occurrence until I had encountered a case in actual practice—a case which I described in the year 1865 at a meeting of the Obstetrical Society of London.* I believed it then to be a very rare disorder, but my observations since that time have convinced me that in a mild form it is very common; and further, that it is, as I have already fully stated, in a more severe form associated with obstinate sickness. Looking back to my notes of this first case I find it recorded that obstinate sickness occurred, although I did not then attach any particular signification to the symptom.

Antelexion of the uterus is more commonly found to be the cause of sickness in pregnancy than retroflexion, because it is rather more rare for the retroflexed uterus to become impregnated. Hence the result, clinically, that when obstinate sickness occurs it is infinitely more likely to be due to antelexion than to retroflexion.

The principal arguments in favor of the view that the vomiting of pregnancy is due to flexion of the organ may be briefly recapitulated: (1) Many women have no sickness, therefore it is not an essential part of pregnancy. (2) It is mostly limited to the first half of pregnancy, being,

* "Obst. Trans.," vol. vii., p. 170.

indeed, in many instances limited to the first two or three months. This is precisely the time during which the uterus is most liable to suffer from flexion; for when it rises into the abdomen such flexion can hardly occur. (3) It is produced almost universally by the standing or sitting position, which would be likely to intensify or exaggerate temporarily an existing flexion. (4) It is suspended, in all but the very severe cases, if the patient remains in bed for a day or two, during which time no such exaggeration of the flexion by standing, etc., occurs. (5) It occurs to a very marked degree in cases which are known to be the subject of flexion at the time of pregnancy. (6) Severe sickness and a decided tendency to abortion are very frequently associated in the same case, from which it follows that it is not unlikely, at all events, that the same cause is operative in producing both effects. (7) Lastly, I would mention my own observations as to the effect of positional treatment in cases of flexion of the gravid uterus, attended with sickness more or less severe. These are to the effect that since my attention has been particularly directed to the subject I have treated several such cases, and that I have found the sickness always to subside, or to undergo an immediate and remarkable amelioration, by so placing the patient or by so changing the position of the uterus as to favor the reduction of the existing flexion.

The history of these cases is, I believe, as follows: The uterus is, at the time pregnancy begins, in a state of flexion—generally slightly so, sometimes more marked in degree. The uterus expands, the walls increase in thickness, there is consequently an additional degree of compression of the tissues at the seat of the flexion. The natural effect of the increase of the expansion would be to unfold the uterus and straighten it, and in point of fact this result is achieved in most cases. But while this process is going on the tissues at the flexure are compressed unduly, particularly in certain positions of the body, and reflex nausea or vomiting may be thus produced.

TREATMENT OF THE VOMITING OF PREGNANCY.

In ordinary simple cases it will be found that this troublesome symptom can be effectually relieved by attention to certain rules as to the position of the body. The patient must be induced to maintain the horizontal position

as much as possible, and it will generally be found that this is sufficient. Attention should of course be paid to the state of the bowels. After the fourth month the tendency to sickness disappears in most instances, and the patient can then move about or sit upright without nausea. The degree to which it is necessary to enforce the horizontal position depends on the severity of the sickness.

In severe cases, where the above treatment has no sufficiently good result, the state of the uterus must be ascertained, and means should be taken to rectify any malposition which may be detected. Various mechanical devices may be put in force to aid the body of the uterus in rising up into its proper position. These will vary according as the body of the uterus is turned forward or backward. A simple air-ball pessary acts well in cases of ante flexion, and a well-fitted Hodge-shaped pessary is proper for cases of retroflexion. The action of the pessary must be aided by maintenance of the horizontal position. When the uterus is restored to its place a pessary may not be further required. Indeed a pessary may not be required at all if the uterus can be raised into its place by pressure with the finger, aided by positional treatment.

Where the sickness is not relieved by any of the above procedures, the case will probably be one in which the cervix uteri is very hard and unyielding. Under these circumstances the plan recommended by Dr. Copeman should be put into practice, and the cervix dilated artificially in order to remove the compression and tension around the internal os uteri. In my opinion, this treatment will be found really necessary in exceptional cases only; in my own practice I have only found the other and more simple measures fail in relieving the sickness in one instance.

In most of the cases recorded as treated by Copeman's plan the dilatation was easily effected, and in these instances probably it was not really necessary; but in two of them certainly the dilatation was more difficult to accomplish; in one of these a two-bladed dilator was employed for the purpose, in another a throat forceps. There is of course danger of producing abortion by the employment of any instrument passing through and beyond the internal os uteri. The finger would be the safest dilator, but in the really difficult cases it may be found, as in the case related at page 409, that the finger could not be introduced at all. Careful dilatation with a steel two-bladed dilator—on the principle of the one repre-

sented at page 365, but larger at the extremity of the blades—seems to me to be the best method of accomplishing the desired end, if the finger cannot be made to enter the cervix. The dilatation should not be rapidly effected, the object being to gently release the tension of the structures without exciting contractions of the uterus. When the os externum admits or can be made to admit the finger it would be best to employ the finger for the further dilatation of the canal higher up. It must be recollected that the cervical canal has a length of rather over one inch, and it appears necessary to dilate the canal at its upper extremity in order to give the necessary relief under such circumstances. The employment of the finger has one drawback—namely, that as a rule the finger cannot be readily introduced so far as the internal os uteri without passing a considerable part of the hand into the vagina.

The induction of premature labor could be practiced, as a last resource, when other measures are found to be of no avail and the life of the patient is at stake.

CHAPTER XXIX.

DISEASES AND INJURIES OF THE OS AND CERVIX UTERI.

The "Ulceration" Theory of Uterine Disease—Laceration of the Cervix Uteri: its Effects and Results—Dr. Emmet's Views on the Subject—His Method of Treatment—Importance of Eversion of the Cervical Lining: Causes of the same—Hypertrophy, Cystic Degeneration of the Os Uteri, etc.

Ulcerations of the Os Uteri—Erosions—True Ulcerations—Syphilitic Ulcerations.

DISEASES OF THE OS AND CERVIX UTERI.

"A whole generation of physicians," says Dr. Emmet,* "has been misled by the delusion of chronic inflammation and ulceration of the uterus—conditions which no one has yet been able to demonstrate on the dead body."

While, however, most of the so-called ulcerations and inflammations can be shown to be referable to changes of other parts of the uterus, we have of late learned that there

* *Loc. cit.*, p. 129.

are local conditions and diseases of the os and cervix which appear to require more attention than they have yet received—namely, the changes incident upon or following after the laceration of the cervix uteri during parturition. It is not a little remarkable that, largely used as the speculum has been in the investigation and treatment of the diseases of the uterus, cases of severe lacerations of the cervix seem to have been overlooked until a very recent period even by those who were most in the habit of employing the instrument.

It will be necessary to consider systematically the changes observed at the os uteri, and in so doing, to endeavor to show the relation of these changes to the diseases of the other portions of the uterus.

LACERATION OF THE CERVIX UTERI.

It not unfrequently happens that in the process of parturition the uterine cervix is more or less injured, the vaginal portion being lacerated in various degrees. But it cannot be said that these lacerations have been considered as constituting lesions of any considerable importance until recently. The subject has, however, attracted much attention in the United States during the last few years, and it is evident that the lacerations in question are very important factors in the production of diseases or discomforts referable to the cervical part of the uterus. Dr. Goodell, writing in 1879, states that about one sixth of the women who have had children, applying at the University of Pennsylvania Dispensary, have an ununited laceration of the cervix.

The second edition of Dr. Emmet's valuable work contains a full account of the subject, together with the results of his own observations and inquiries.

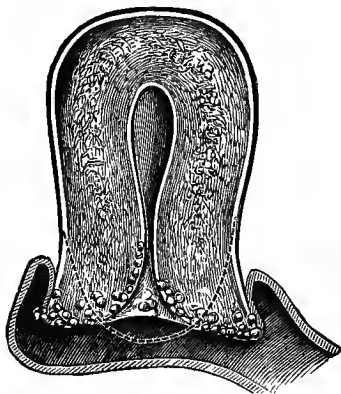
Since 1862 Dr. Emmet has practiced an operation in such cases. In 1874 he published a paper on "Lacerations of the Cervix Uteri as a frequent and unrecognized Cause of Disease." Roser,* it appears, first described what he termed "ectropium," of which there are two forms—one arising from cicatricial distortion, the other by the crowding forward and swelling of the mucous membrane. Roser indicates as causes, excessive fissures, also probably ob-

* "Archiv, f. Heilk.," Leipzig, No. 298.

stetrical incisions and gangrenous destruction of the os uteri. Roser regarded many of the cases of obstinate and inveterate hypertrophy thus arising as incurable; and as regards the cicatricial ectropium says, "One will scarcely be prompted to undertake a curative experiment."

Dr. Emmet thinks the term "cicatricial ectropium" not well-chosen, for "the flaps in the cervix are first rolled out and forced apart from the enlarged uterus resting on the floor of the pelvis, and this is increased as the circulation becomes obstructed, and as the mucous follicles undergo cystic degeneration. The condition at length becomes one

FIG. 122.*



of partial strangulation, as in paraphymosis." He thinks the English term better than trachelorrhaphy or hysterotrachelorrhaphy. Of 500 fruitful women who have come under his care in private practice, 32·80 per cent who had been impregnated and now suffered from some form of uterine disease, were found to have laceration of the cervix. The injury on the left side is the most common, and double laceration the next. More than thirty per cent of the cases were attributed to tedious labor. He thinks rapid labor must be a cause to a greater extent than his figures prove. Sterility resulted in 71·34 per cent of cases

* The drawing exhibits results of double lateral laceration, showing also enlarged mucous follicles. The dotted line shows the outline when the flaps are brought together (Emmet).

where the cervix was so injured. Menstruation is in 51.59 per cent of cases increased (in length of days). The occurrence of cellulitis in connection with or as a consequence of laceration of the cervix is the most important and most frequent complication. Thus, of the 164 women last under observation, 33, or 20.12 per cent, had cellulitis at the time of the first examination.

The laceration is common, is often overlooked owing to softness of the parts, and it is most common in the middle line, anterior more common than posterior. If in the median line and limited to cervix it generally heals rapidly. It may of course pass into bladder and then may leave fistula. Laceration through posterior lip also heals rapidly and may not be suspected unless the inflammation extends sufficiently into posterior *cul de sac* to set up attack of inflammation. If cellulitis occurs at this point it always induces a most intractable form of retroversion, owing to the formation of a cicatricial band felt as a cord. This form of laceration seems from the history of the cases due to "posterior occipital" position.

When, however, the laceration is in a lateral direction and extends beyond the crown of the cervix, a condition arises which defeats the reparative power of nature. There will exist a tendency for the tissues to roll out from within the uterine canal when the upright position is assumed. The lips are forced apart by the weight of the uterus above, the posterior being pushed backward, the anterior forward. The angle of the laceration becomes the starting-point of an erosion, which gradually extends over the everted surfaces. The involution is retarded, the erosion bleeds readily as it extends, and the woman gets about; a profuse cervical leucorrhœa ensues, and the appearance of a frequent show causes the patient to seek relief. This laceration was until recently universally mistaken for ulceration, and it long baffled all treatment: improvement from rest was followed by relapse on attempt at exercise.

The mucous follicles of the cervix will be found to have gradually undergone cystic degeneration.

When the laceration is *double* and lateral, the flaps flatten against the posterior wall of vagina or floor of the pelvis, so that all appearance of laceration becomes lost. On digital examination the cervix is found to be larger than the body of the uterus. The relative size of such a cervix to the body of the uterus is about that of the top of

a half-grown mushroom to its stem. These flaps can be rolled in on using the speculum with the patient on the side, and by seizing the anterior and posterior lips of the cervix with a tenaculum in each hand.

There is a variety when the laceration is unilateral, giving obliquity to the uterus.

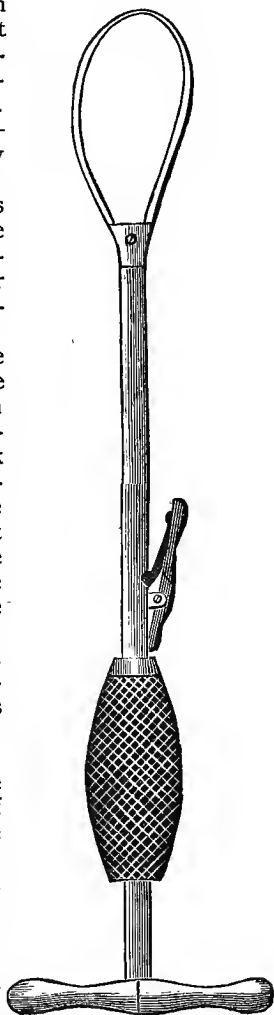
Treatment.—Dr. Emmet considers an operation is required where the condition is evident, where enlargement of the uterus still remains, or where the woman suffers from neuralgia.

The *preparatory* measures are, use of vaginal hot-water injections, use of a pessary to lift uterus from floor of vagina, application of tincture of iodine or iron twice a week with glycerine dressings, and pledges of cotton, one before and one behind, to keep flaps together. It is often necessary to puncture the overloaded cysts and so reduce the strangulation and swelling; iodine is applied after this scarification.

The *operation* is best performed with the patient in the Sims position on the side. First the flaps are brought together by tenacula. Then the uterine tourniquet—Fig. 123, a special instrument for the purpose, constructed of a piece of watch-spring—is applied, for the hæmorrhage is often excessive. Emmet now only uses it when tissues are unusually soft; the use of hot water before the operation renders it less liable to occur.

The scissors is the instrument preferred to freshen the surfaces.

FIG. 123.*

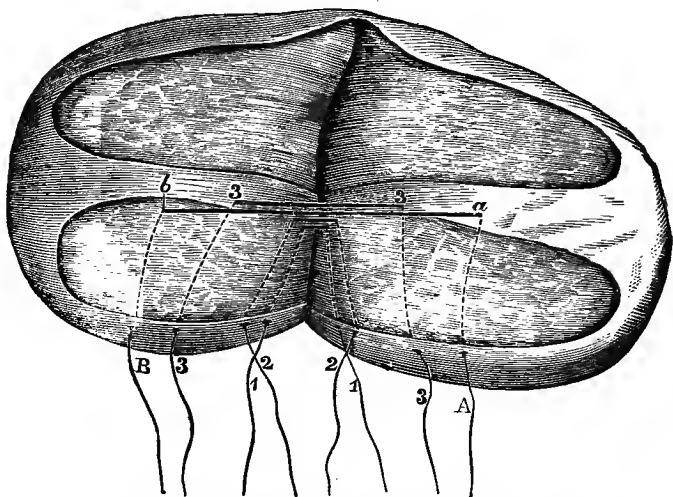


* Fig. 123, watch-spring tourniquet used by Emmet.

The uterus is drawn down, if possible, to outlet of vagina during operation. A short *round needle* is best, and wire sutures are employed as shown in the drawing. The sutures are removed in seven days. The patient is kept in bed for twelve days. The pessary, which is removed for the operation, is replaced soon after it is completed.

Dr. Emmet says that the hypertrophy and elongation of cervix will almost invariably be found due to laceration of cervix uteri, and the remedy is to repair the laceration.

FIG. 124.*



He denounces amputation with scissors, knife, or cautery, as malpractice, and denounces, as most uncalled for, cautery or caustics to heal a so-called ulceration. "Amputation of the cervix or the repeated application to it of cautery or caustics, will maim any woman and most likely render her sterile, and for the want of the support which the cervix normally affords she will be liable to suffer from displacement of the uterus.†

At the Cambridge meeting of the British Medical As-

* The drawing (Fig. 124) shows the shape of the raw surfaces after denudation (Emmet).

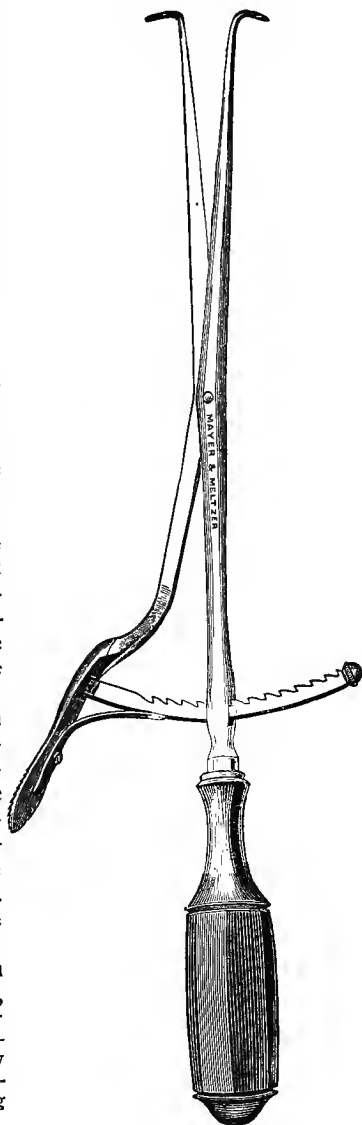
† *Op. cit.*, p. 483.

sociation, held 1880, Dr. Montrose A. Pallen of New York exhibited instruments employed by him in repairing the lacerated cervix. In his operation scissors of various shapes are employed to facilitate proper denudation. Dr. Pallen strenuously recommends the operation, and expresses his conviction of the necessity and advantages of the operation in suitable cases.

Looking over the records of my own cases, I find cases in which lacerations of the cervix have been noted as being present. From what I now hear of the cases related as observed in America, it seems evident that in developing the subject and pointing out how the lesion is to be remedied, our transatlantic brethren have done a good service to gynæcology. I believe Dr. Playfair was the first to perform this operation in England, and he has recently communicated a paper on the subject to the Obstetrical Society of London. I have myself successfully performed it, and have come to recognize it as a most necessary and valuable operation.

[Where the cervix is much engorged and very vascular,

FIG. 125.*



* Fig. 125 shows an instrument (reduced in size) made by Meyer & Meltzer, admirably adapted for holding the uterus during

we are sometimes annoyed at the profuse bleeding which accompanies the operation. Dr. Clement Cleveland, of New York, has recently invented a neat little double-edged saw, of which I insert a wood-cut, for use in just such cases. It cuts with the backward stroke only and takes off the tissue very neatly. I have used it two or three times, and like its working. Of course it is only intended as an adjunct to the scissors, and is not meant for use in all cases.]

A severely lacerated cervix implies a removal of the proper support to the body of the uterus, and dislocation of the organ is no doubt favored thereby. A further effect is the exposure, the friction, the irritation of the lining of the cervix, resulting in abrasion, bleeding, hyper-secretion, etc., of the irritated surface. It is true that by elevating the uterus the latter class of evils is greatly lessened; so much so, in fact, in many cases, that the laceration itself becomes, or appears to become, a minor evil. Dr. Emmet's account is in conformity with this view of the matter; and it is evident that, while considering it necessary to repair the cervical laceration, he found it also necessary in many cases, both before and after the operation, to sustain the body of the uterus in position by a vaginal pessary.

An important practical question is to determine how far *eversion of the cervical mucous membrane* is possible without laceration of the cervix. It is now perfectly clear that in a considerable number of cases eversion arises in connection with cervical laceration, but there can be no doubt also that very extensive eversion may occur without such laceration. As a rule, in long-standing cases of acute flexion, there arises a thickening, swelling, and eversion of the os uteri on the anterior or posterior aspect, and this may even occur in patients who have not had children. Thus, in ante-flexion cases the anterior side of the os, in retroflexion cases the posterior side, becomes swollen and the mucous membrane expands. In women who have had children it is most liable to occur undoubtedly, but my observation enables me to say that it may occur even to a considerable degree in cases where there has certainly been no laceration.

Hypertrophy, cystic degeneration of the lips of the os uteri, eversion of the mucous membrane, abrasion or erosion of the mucous membrane so everted, are all liable to be met with, and when excessive in degree may be found to have originated in a lacerated cervix, while in other cases

they result from long-standing congestion of the lips of the os uteri, the primary cause of which has been a severe flexion of the uterus. In some cases we find the os uteri represented by two rounded protuberances, hard and firm, red and angry-looking on the cervical aspect, irregular as regards the surface from nodular swellings the result of cystic degeneration, and secreting freely a sanious, yellowish fluid. The cystic degeneration, as it has been termed, appears to be the result of overgrowth and distension of the Nabothian follicles. In process of time the lips of the os have become hypertrophied, hardened, and otherwise diseased, and the two factors which *singly* or *jointly* operate in bringing about this state of things appear to be chronic flexion of the uterus and laceration of the cervix during parturition.

The opinion has been expressed by more than one authority in America that the existence of laceration of the os uteri constitutes predisposition to cancer of the os uteri, and that for this reason, if for no other, the lesion in question is one demanding operative interference. (Further remarks on this subject will be found in a later chapter, on Cancer of the Uterus.)

ULCERATIONS OF THE OS UTERI.

After what has been said in reference to laceration of the cervix and eversion, due either to this injury or to the existence of flexion, the consideration of the subject of "ulcerations" of the os uteri is simplified.

Simple eversion of the cervical lining has been frequently taken to be "ulceration." Dr. Farre some years ago * said: "In the more common degree of hypertrophy with eversion, a crescentic protrusion only of the cervical lining occurs. The unevenness of the surface caused by the slightly swollen and prominent rugæ, and as often by the numerous little depressions consisting of enlarged mucous crypts, according as one or the other of these is the predominant normal structure in the cervix, gives to the part during life the appearance of a raw and granular surface, while the natural boundary between the lower edges of the cervical canal and the lips of the os tinæ being now transferred on the latter in consequence of this eversion, an abrupt to

* "Cycl. An. and Phys.": article Uterus.

semicircular line becomes visible, which, while it only indicates the natural termination here of the vaginal epithelium, is frequently mistaken for the margin of an ulcer." The stretching of the parts, which is sometimes produced by the mere introduction of the speculum, may give rise to this kind of eversion of the lining of the cervix, whenever the os uteri is a little lax and soft, and slightly open.

Erosions of the everted cervical lining are not very uncommon, but they rarely pass into the state of true ulceration. The loss of tissue involved is generally merely removal of the epithelium of the part affected, the vascular or proper tissues underneath being unaffected. The removal of the epithelium, however, leaves the villi uncovered, and these are apt to undergo hypertrophic changes, and increased vascularity also results. What is termed a "granular" change is sometimes noticed in cases where the abrasion or erosion has been in existence for some time. During pregnancy, as was observed by Cazeaux some years ago, the villi of the cervical mucous surface undergo hypertrophic changes, and are more vascular than usual. Moreover, they readily bleed when touched, and these "physiological" changes (for such they are) must not be confounded with ulceration or erosion produced by disease.

Erosions of the everted cervical lining appear to be in great part due to the friction of the surface against the vaginal floor produced by the movements of the body. A great secretion of fluid often occurs in cases of this kind, the fluid being ichorous, or watery, or sanious, according as the blood-vessels of the exposed villi are lacerated or not. I have observed a tendency to exfoliation or erosion of the mucous membrane at the os externum, in cases of chronic flexion with the retentive form of leucorrhœa. Here the retained uterine secretions become irritating, and this irritation probably has an eroding effect on the delicate mucous membrane at the os uteri.

True ulcerations of the vaginal portion of the cervix uteri are sometimes met with. They are generally associated with enlargement and hypertrophy of the cervix uteri, whatever may be the cause of that enlargement; or with those affections of the uterus usually classed under the term "prolapsus uteri." They are produced by the mechanical irritation to which the prolapsed cervix is exposed, and have all the characters of ordinary ulcerations.

Another form of ulceration of the os and cervix uteri, which is rare, is by some authors believed to be of cancerous nature, by others to be of *tuberculous* nature. Dr. West, in whose work * will be found a careful *résumé* of what has been said by different authorities on the subject, believes that these intractable ulcerations are instances of epithelial carcinoma; and he agrees with Robin in considering that this kind of ulcer is to the uterus what lupus or cancrroid ulcers are to the face. There appears to be no reason, however, why both sides should not be right, or for denying that both tuberculous ulcers of chronic nature and lupoid disease of the cervix uteri may be witnessed, though not of course in the same individual. It can very rarely happen that this question will arise practically for determination, these intractable ulcerations being very uncommon.

Syphilitic Affections, Ulcerations, etc., of the Os and Cervix Uteri.—Concerning true chancre—primary syphilitic ulcer—of this part, there is but little difference of opinion. It is pretty well understood that it is very rare, although it has been observed. Chancre of the os or cervix uteri presents an appearance like that of chancre observed elsewhere; it is said that there is a greater disposition on the part of the ulcers here situated to bleed. The only conclusive evidence of the nature of the ulcer would be its reproduction by inoculation.

Respecting *secondary syphilitic* eruption, or ulceration of the os and cervix, there has been much discussion, nor is it at all settled how frequently ulceration is present in individuals affected with secondary syphilis. It does not appear that there is anything peculiar about the character of the ulcerations present in these cases, or which would enable us to say at once that such and such an appearance was due to syphilis. My own observations induce me to agree with Dr. Tyler Smith, who held that "in almost all cases in which leucorrhœa and disease of the os and cervix uteri are present in women suffering from constitutional syphilis, the uterine symptoms are a genuine manifestation of the constitutional or secondary disorders."†

The diagnosis of secondary syphilitic ulceration of the os and cervix will be materially influenced by the presence or absence of a syphilitic history in the particular case, and before proceeding to form a decision on the point all the

* *Op. cit.*, p. 361.

† "On Leucorrhœa," p. 98.

antecedents of the patient must be carefully scrutinized. The effects of anti-syphilitic remedies would frequently assist us in coming to a conclusion.

Treatment of Ulcerations and Hypertrophy of the Os Uteri.—An exceedingly important element in the treatment of these cases is *rest*, and careful ablution at frequent intervals with warm water. It frequently happens that, by these measures alone, the size of the os uteri is very greatly diminished (see Treatment of Congestion of the Uterus, page 139), and in all cases, whether subsequently requiring operative treatment or not, these measures may be advantageously carried out. Styptic applications should be subsequently employed; and a solution of nitrate of silver, or tannic acid, or dilute iodine tincture, is useful in further reducing the hypertrophy (see page 142).

CHAPTER XXX.

CHRONIC INVERSION OF THE UTERUS.

CHRONIC INVERSION OF THE UTERUS.—Causes, Effects, and Varieties.

DIAGNOSIS.

TREATMENT.—Reduction by Systematic and Continuous Pressure aided by Anæsthesia—Treatment by Excision.

We are here concerned only with cases of chronic inversion of the uterus. The consideration of the condition in a recent state belongs to the domain of obstetrics proper.

Inversion of the uterus may occur during, or soon after, parturition, and this is its most frequent cause; but it may occur also in connection with the presence of fibroid growths—polypi—attached to the internal surface of the organ, and thereby distending it. It may be partial or complete. In its complete form it may arise after parturition; polypi generally occasion an incomplete form of the displacement. When there is complete inversion, the whole organ is turned inside out; the uterus lies wholly in the vaginal canal, and in recent cases projects considerably outside the vulva. When occurring in connection with parturition, the uterus gradually diminishes in size, though less quickly than under ordinary circumstances, and at the end of a few months the uterus may be wholly within the vagina, but completely inverted.

The symptoms and effects of inversion of the uterus are generally of a striking character, but not invariably so. Hæmorrhages, and almost incessant loss of blood in smaller quantity, are usually observed. Pains of a dragging character, and a sense of great discomfort more or less continuous, are experienced by the patient, these effects being not seldom of a very aggravated character.

The patient frequently becomes very anæmic, and there may be great general prostration, breathlessness, and loss of power of locomotion, with œdema of the lower extremities, etc. Chronic inversion of the uterus may exist for many years; cases of twenty-five or thirty years' duration are well authenticated.

In cases of inversion of the uterus a tumor is felt occupying the vagina, which varies in size according to the degree of the inversion and the time which has elapsed since its occurrence. Thus, if the inversion be recent and complete, the tumor in the vagina may be so large as to project beyond the vulva; but if some weeks have elapsed, it may be no larger than the fist, although still complete. The tumor is smooth, uniform, and no opening is to be detected on the surface. On digital examination, it is found that the vagina terminates above, round the pedicle of the tumor, in a perfect *cul de sac*, and the surface of the tumor is actually continuous with that of the vagina. At the point where the os uteri should be situated this pyriform tumor projects downward into the vagina. The tumor itself is hard and firm, and resistant, when the inversion has lasted a few weeks. If the patient have been recently delivered, if a tumor has occupied the vagina since delivery, and if, further, it be known that there was no tumor previously, the diagnosis is not usually difficult to establish, provided the inversion be complete. This statement is, however, not quite universally true, for pregnancy may be associated with polypus, and the polypus may be thrust down into the vagina immediately after the expulsion of the child. Gooch and others have related cases of this kind. There is no possibility, in complete inversion, of passing the finger above the pedicle of the tumor, nor can the uterine sound be made to pass in this direction. The symptoms attending the production of inversion during labor are characteristic: excessive pain—which may, however, be absent—prostration, syncope; the uterine tumor is no longer felt above the pubes; hæmorrhage is usually observed. Inversion may

occur just at the end of labor, or a few days after, from incautious exertion on the part of the patient. Inversion of the uterus usually gives rise to frequent and profuse hæmorrhages, together with great discomfort and pain; but it does now and then happen that the symptoms are not so urgent as to attract much attention until the disease has lasted for some time. That the symptoms and history of the case are not always demonstrative of its true nature, is proved by the fact that inversion of the uterus has been frequently looked upon and treated as polypus.

With reference to the *diagnosis of complete inversion from polypus*: in both cases the tumor is generally more or less pyriform; in both cases it is hard, resistant, smooth; in both the tumor terminates above by a constricted portion; in both there are hæmorrhage, leucorrhœa, and symptoms produced by pressure on the adjacent viscera; but in the case of inversion, neither the sound nor the finger can be passed upward beyond the pedicle of the tumor, whereas, in the case of a polypus projecting down into the vagina from the interior of the uterine cavity, an instrument can be passed into a cavity beyond the neck of the tumor; the neck of the tumor being encircled by the os uteri, the sound can be made to pass into the interior of the uterus. This distinction is not a perfectly reliable one, for there is occasionally a difficulty in detecting the cavity above when it really exists,* and sometimes there is found to be adhesion of the sides of the polypus to the adjacent wall of the vagina or to the interior of the cervix uteri (West, Blundell); and, further, it may happen that the polypus grows from a part of the uterine cavity close to the orifice (Gooch). It is said that in cases of inversion the tumor is very sensible; that this sensibility is wanting in cases of polypus; that the surface of the inverted uterus is rough, whereas the surface of a polypus is smooth; but no reliance can be placed on such supposed distinctions. If an examination be made within a week after the labor, the fact that the normal uterine tumor is absent from the hypogastric region, associated with that of the presence of a rounded firm tumor in the vagina, will demonstrate the nature of the case; at a later period this remark would not hold good, or at least in the same degree. Another mode of examination, enabling us to distinguish between inversion and polypus, is the com-

* See *Lancet*, 1827-28, vol. i., p. 327.

bined examination by the rectum and by the bladder—*i.e.*, the finger introduced into the rectum and a sound into the bladder, by which means an absence of the body of the uterus from its normal position can be substantiated (Arnott).

In cases of *partial inversion of the uterus* the difficulties as regards the diagnosis are more considerable than when the inversion is complete. Here the pedicle of the tumor is encircled by the os uteri, as observed when a polypus projects downward from the uterus into the vagina. In cases of partial inversion, however, the sound cannot be passed so far beyond the encircling band formed by the os uteri as usual, whereas in cases of polypus the cavity may be even longer than ordinary. A complex condition has been now and then observed, in which the diagnostic mark alluded to might fail; that, namely, in which there is a polypus of the uterus forming the lower part of the tumor, this tumor having dragged down the fundus uteri with it and produced partial inversion, where, in fact, the two conditions, polypus of the uterus *and* inversion of the uterus, are associated. Dr. McClintock * has directed attention to a new diagnostic sign of the presence of inversion. It is this: When the case is one of inversion, on drawing the tumor downward the lip formed by the os disappears; on ceasing this traction the lip is again evident. A very careful consideration of the previous history, combined with examination of the parts, are necessary to come to a correct conclusion in these doubtful cases. The tumor due to a partially inverted uterus is hard and firm, like a fibrous polypus; the symptoms produced by it are pretty much the same—hæmorrhages, discharges, etc.—but there is more pain, more discomfort to be looked for in the case of inversion than when there is only a polypus present. Again, the double examination by the rectum and bladder is very important in assisting the diagnosis, the more so as in cases of polypus partly projecting from the os—the particular cases, in fact, which most closely simulate this partial inversion of the uterus—the body of the uterus is generally more or less enlarged, owing to the presence of the polypus within it.

TREATMENT.

There has been usually found but little difficulty in replacing an inverted uterus when the condition has been de-

* *Op. cit.*, p. 91.

tected at once, as in the process of labor. When, however, the disease is a chronic one, the difficulties to be encountered are great. We must first speak of the treatment of cases of chronic inversion of the uterus of the simple and uncomplicated kind.

Formerly these cases were only treated by excision; the patient was relieved of the tumor and of her troubles by means of the knife, at the expense necessarily of loss of all power of bearing children subsequently, and not unfrequently at the expense of loss of life altogether. Happily art has stepped in to the rescue of these cases, and a method has obtained general adoption in the profession, by means of which the normal shape of the uterus is restored, even in long-standing cases. M. Valentin,* in 1847, reduced an inverted uterus after the lapse of upward of a year from the date of its occurrence. The reduction was performed by the aid of the two hands, the left placed over the hypogastric region, the right in the vagina, the tumor being grasped by the finger and thumb of the right hand. These manipulations were performed while the patient was under the influence of ether; and after application of continuous pressure in this way for about ten minutes the reduction was accomplished, and the patient completely cured. The etherization in this case enabled the patient to bear the operation, it having been relinquished previously owing to the great pain produced. Mr. Canney,† of Bishop Auckland, reduced a chronic case of inverted uterus of five months' duration, in 1852, under the influence of chloroform, and by manipulations pretty much the same as those described above. M. Barrier's‡ case, also in 1852, is the next reported, the duration having been considerable. These three cases had escaped my notice in preparing the first edition of this work. Dr. Tyler Smith,§ in 1856, successfully reduced an inverted uterus of twelve years' duration after several days' treatment, the uterus being pressed and moulded by the fingers for about ten minutes night and morning. After repeated trials, the cervix uteri, which was firmly contracted round the neck of the projecting tumor, began to yield a little, and the tumor could be slightly sunk in the os. After each operation, a large india-rubber air-

* Quoted from *Gaz. Med.* in Ranking's "Abstracts," vol. vii.

† Ranking, vol. xvi.

‡ Ibid.

§ "Medico-Chir. Trans.," vol. xlii., p. 183.

pessary was placed in the vagina, and inflated to as great an extent as the patient could bear. The air-pessary was worn, with few exceptions, day and night. "After more than a week of these proceedings," says Dr. Tyler Smith, the patient felt a good deal of pain through the whole of one night; and in the morning, when an examination was made, it was discovered that complete reinversion had taken place. A small air-pessary was afterward worn for a few days, and the recumbent position maintained. Subsequently the patient became pregnant.

The principle of the successful reductions effected in obstinate cases is to maintain a persistent pressure on the inverted part, or rather a combination of moulding and pressure by means of the fingers and thumb introduced into the vagina, counter-pressure being applied externally, and when this does not succeed, to apply a more continuous but less forcible pressure by means of an india-rubber air-pessary. The part which has been inverted last should be pushed upward first, as Dr. McClintock has very properly remarked. The uterus is capable of being readily moulded, and on this property of the uterus our attempts are to be based; sudden, too forcible, and too abrupt manipulations must be avoided. Chloroform or ether, as the reports show, are invaluable adjuncts in the treatment.

Dr. Marion Sims proposed, in difficult cases, to make a vertical incision through the uterine tissues on each side, at the part corresponding to the os uteri, so as to allow more easily of the reduction of the tumor. Dr. Barnes* also performed an operation on this principle successfully. The case was one of some months' standing, where continuous pressure had failed. He drew down the uterus and made three vertical incisions. The uterus was at once reduced by taxis, and the case did well. He recommended that in future two incisions only should be made, and that continuous elastic pressure (by water-bags) should be employed to restore the inverted uterus.

Dr. Emmet's method of reduction is as follows:

With one hand in the vagina, the fundus, in the palm of the hand, is firmly grasped and pushed upward, the fingers then immediately separated to the utmost; at the same time the other hand is employed over the abdomen in the attempt to roll out the parts forming the ring by sliding the

* "Med. Chir. Trans.," vol. liii.

abdominal parietes over its edge. This process is continued some time, and later on the tips of the fingers are used to complete the re-inversion. Dr. Emmet has also employed sutures for closing the lips over the fundus after a partial reduction, to preserve temporarily the advantage gained.*

In Dr. Emmet's operation an important element is the application of counter-pressure over the uterus from above, and the taxis performed in this way has proved very successful in his hands. Dr. Tate, of Cincinnati,† records an interesting case where counter-pressure was made above by two fingers carried up in the rectum, the fundus being then pushed up by the two thumbs. As this procedure tired the hands, the urethra was dilated and one finger of the other hand inserted so as to get counter-pressure in front as well as behind. The reduction was finally effected by pressure from a stem placed below instead of the two thumbs. Silver wires were placed in the os for three days.

Dr. Jas. P. White states that his experience is that "well-directed pressure upon the fundus, if continued long enough, will in all cases, unless prevented by firm adhesions, result in restoration or reposition, no matter how much time may have elapsed since inversion has occurred."‡

His method of reduction is as follows: The operator kneels on the ground, the patient is placed on the back at the edge of the bed, anæsthetized. The uterus is then manipulated by the right hand introduced into the vagina entirely. The hand grasps the uterus and presses upon the tumor; at the same time Dr. White's apparatus is brought into play. It consists of a hard rubber cup and stem, the latter a little curved; the stem ends externally in a pyramidal-shaped spiral spring of steel wire. The cup is placed against the fundus uteri, the base of the spring against the breast of the operator. The left hand of the operator is used to make counter-pressure on the upper part of the uterus through the abdominal walls.

Dr. White relates three typical cases, of six months', three years', and twenty-two years' duration respectively; in the last case reduction was effected in less than two hours. Dr. White says he has performed the reduction successfully in this way in nine other cases.

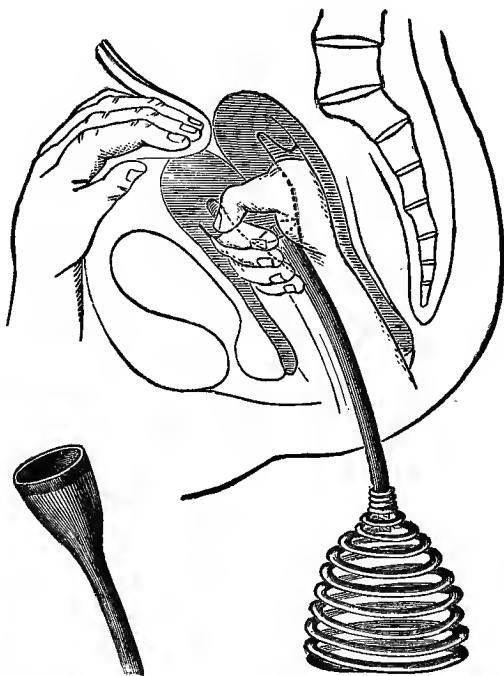
* *Op. cit.* (2d edit.), p. 424.

† *Cincinnati Lancet and Observer*, March, 1878.

‡ "Transactions of Philadelphia Medical Congress," 1876.

The more recent experience of various operators would seem to be in favor of reduction of the inverted uterus by a process of continuous elastic pressure spread over some little time, in preference to a more rapid and summary method of procedure. And various methods have been successfully adopted of applying such continuous elastic pressure.

FIG. 126.*



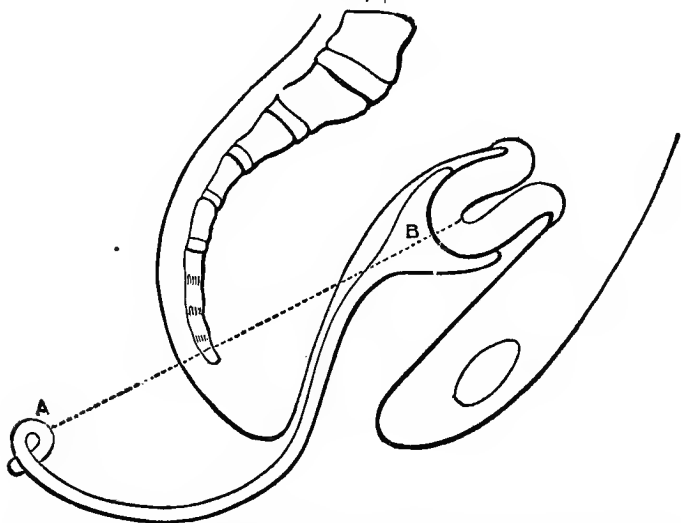
Thus Dr. Barnes used a stem provided with an elastic cap for the purpose of keeping up the pressure. (This was employed after incising the os uteri at two or three points in its circumference so as to relax or weaken the constriction; incisions one third of an inch deep and two thirds of an inch long.)

* White's method.

Mr. Lawson Tait has employed a stem with a cup-shaped end, six inches long, and pressure is made by means of elastic ligatures fixed to the stem outside the vagina and attached to a band round the waist.

Dr. Aveling* has improved the stem used as above by giving it an external perineal curve. Dr. John Williams records a case thus treated: a cup of vulcanite was mounted on a metallic stem having a perineal curve, and to it affixed four elastic bands, two carried in front and two behind.

FIG. 127.†



At the end of twenty hours removed, partial re-inversion having been effected. The instrument re-applied and bands tightened, and after another twelve hours the operation completed. In this case the inversion was of two years and four months' duration. Dr. Aveling records two cases of his own, and states that the average time occupied in three cases in reducing the uterus was forty hours only.‡ A case of inversion is recorded by Dr. Gervis,§ treated in a similar

* "Obst. Journ.," lxxiii., p. 21.

† Fig. 127 shows the shape of Dr. Aveling's instrument; the line A B the direction of the pressure.

‡ *Brit. Med. Journ.*, Sept. 6, 1879. § "Obst. Journ.," lxxx., p. 373.

way after other methods had been only partially successful. Dr. Wing, of Boston, U. S. of America, reports a case of fourteen months' standing cured in three days by the above method.

Reduction after Abdominal Section.—Dr. Thomas, of New York, performed a remarkable operation in an obstinate case. He cut into the abdomen, dilated the *cul de sac* of the uterus from within the abdomen, by a steel dilator, and thus

FIG. 128.*



reduced the inversion by the taxis. Recovery followed. Previously the pressure and incision method had failed. In three other cases, by ingenious variations of the pressure treatment, Dr. Thomas succeeded in restoring the uterus.

The treatment of cases of *inversion of the uterus associated with polypus of the uterus* requires a few words. When the polypus has a large basis of attachment, the fundus may

* Fig. 128, from a preparation in University College Museum, represents inversion associated with a large polypoid tumor. The tumor has produced complete inversion of the uterus and of the vagina,

be so drawn downward that what appears to be the pedicle of the polypus is really the uterus itself. Thus a specimen was exhibited at the Pathological Society, and referred to Dr. Marion Sims, Dr. John Ogle, and myself, for examination, in which such a tumor had been excised, and a circular piece comprising the fundus uteri had been removed with it.* The case shows the necessity for great caution in excising tumors projecting through the os uteri. In most cases where a polypus projects into the vagina from the uterus, it draws down the wall of the uterus a little, and when the pedicle is broad this partial inversion of the uterus is more likely to be extensive. The use of the sound would in such cases give valuable information.

CHAPTER XXXI.

PROLAPSUS OF THE UTERUS.

GENERAL REMARKS on the Pathology of the Subject—Mechanism by which the Uterus is kept in its Place—The various Conditions present in Cases of Prolapsus—Illustrations of various Conditions and Complications—Mechanism of the Process—Relation to Cystocele, Rectocele, and Flexions—Hypertrophic Elongation of the Cervix and its Varieties—Symptoms and Progress of Prolapsus.

DIAGNOSIS.

TREATMENT.—Must be adapted to the Peculiarities of the Case—Treatment of Prolapsus from Hypertrophy of the Cervix—Excision of the Part—Other Forms of Prolapsus—Measures directed (1) to the Condition of the Uterus; (2) to the Condition of the Uterine Supports—Artificial Means for maintaining the Uterus in its proper Place in the Pelvis, by Pessaries, by external Appliances, by Constriction of the Vaginal Aperture, or the Canal itself—Description of various Operative Procedures.

Prolapsus, or falling of the womb, is an affection to which women are, in one form or other, exceedingly liable, and it is one which is not unfrequently productive of very much inconvenience and distress. Intimately connected as the uterus is with the adjacent organs, its displacement downward is almost necessarily attended with more or less displacement of these organs also. Prolapsus of the uterus, then, is rarely a simple affection; and, for this reason, it will be convenient

* "Trans. of the Pathological Society," vol. xvi., p. 210.

to consider together the various displacements associated more or less frequently with it, viz., prolapsus of the uterus, prolapsus of the bladder (cystocele), prolapsus of the vagina, and prolapsus of the rectum through the vagina (rectocele).

The term "prolapsus" is in this country generally used to designate all grades of the displacement. In America it appears that "prolapsus" means falling of the womb within the vagina, while "procidencia" is used to designate its appearance externally to the vaginal aperture. In this place one term—prolapsus—will be applied to both these conditions.

The anatomical relations and connections of the uterus are of the utmost importance in all that concerns a right understanding of the subject of prolapsus. The uterus is supported by a complex mechanism, the various parts of which are mutually dependent, and a failure or weakening of one leads to derangement of the others. It frequently requires no little attention to ascertain where the "break-down," literally as well as figuratively, first happened; but unless the investigation be successful, we can have no true basis for our curative efforts.

Natural Supports of the Uterus.—In a former chapter, the structures by which the uterus is retained in its place have been described, but principally in reference to the prevention of what have been termed the minor displacements of the uterus (see p. 167). We have now, however, to consider how far these natural supports of the uterus prevent those further and more severe displacements which come properly under the head of prolapsus or procidentia of the organ. The *peritoneum* serves little purpose in restraining the downward movement of the uterus. The *round ligament* has an influence which is exerted for the most part in restraining the movement of the fundus backward. Still in a case where the uterus had descended a little, it would aid in preventing further descent. The *utero-sacral ligaments* are so placed as directly to prevent falling of the uterus. They are firm, fibrous bands, passing one on each side straight between the cervix uteri and the sacrum. Dr. Farre justly drew attention to the importance of these ligaments. The *broad ligaments*—not, properly speaking, ligaments, being simply the mesentery of the Fallopian tubes—have, in the early stage of prolapsus, little restraining effect as regards descent of the uterus, but they would necessarily assist in

checking its further progress downward. The *utero-vesical ligaments* connect the uterus very closely with the bladder, and, supposing the distended bladder to be fixed, it would

FIG. 129.



be almost impossible for the uterus to descend below its proper level in the pelvis. The bladder, however, is not so fixed. A movement of the whole bladder downward necessarily carries with it the uterus, and correspondingly the uterus cannot descend without carrying with it that por-

tion of the bladder with which it is connected, viz., the posterior part. Lastly, the *general connections* of the uterus with the adjacent parts, and constituted by a very considerable quantity of blood-vessels and connective tissue, form, as Dr. Savage* has shown, a very important additional apparatus for restraining undue mobility of the uterus. Dr. West considers that the canal of the vagina contributes very much to supporting the uterus in proper position. The researches of Mr. D. B. Hart, referred to at p. 169, explain how the vagina prevents prolapsus of the uterus, and the importance of the firm support which the normal perineum gives to the floor of the vaginal canal.

In his eleventh plate,† Dr. Savage has delineated experimental observations (*post mortem*) on the ligaments of the uterus and the resistance they offer to descent of the organ. Moderate traction on the uterine cervix by a vulsellum was found to compress the bladder against the pelvis, to straighten and put on the stretch the utero-sacral ligaments, to curve, but not to stretch, the round ligament. Cutting through the utero-sacral ligaments allowed the uterus to descend still lower, until the os uteri was just outside the vagina: the results were that the bladder was drawn down closely following the uterus, the rectum not disturbed, the broad ligament now for the first time put on the stretch. Dividing the broad ligament allowed of the further descent of the uterus to the extent of an inch: but the sub-peritoneal pelvic cellular tissue, particularly where it surrounded the uterine blood-vessels, and where it was strengthened by additional trabecular filaments, was found to restrain further descent of the organ. Complete prolapsus was produced on the yielding of the pelvic reflexions of the broad ligament. The round ligament was last put on the stretch.

The perineum is undoubtedly a most important structure in relation to the prevention of complete or partial uterine prolapsus and procidentia. This has been forcibly put forward by Dr. Thomas in his last (1880) edition, and Mr. D. B. Hart's views are in accordance therewith. Dr. Thomas, in his latest edition, gives drawings exhibiting the shape and size of the perineum to illustrate his views.

* "Illustrations of the Surgery of the Female Generative Organs," 1863. Plate IX.

† *Op. cit.*

He regards the perineum in the normal state as a concavo-convex triangle, anteriorly supporting the inferior wall of the vagina, while its posterior side supports the anterior wall of the rectum. The accompanying drawing (Fig. 129) is one published by myself in the "Mechanical System of Uterine Pathology" two years ago, and the shape and size of the perineum here shown is closely in conformity with that represented by Dr. Thomas in his lately published work.

The foregoing suggests valuable inferences regarding the controlling powers *quoad* simple descent of the uterus; but it must be recollected in applying these inferences that they suppose a pre-existent normal condition (and I would include shape) of the uterus itself.

In point of fact prolapsus of the uterus is a complex event. It is impossible, moreover, to consider prolapsus apart and separate from the subject of flexions; from an etiological point of view at least. I have already discussed, under the head of Flexions, the mechanism of those changes in the shape of the organ, and the relation of the uterine ligaments to flexions. We have, therefore, now, amongst other things, to discuss the relation between flexions and prolapsus in its various forms and degrees.

There are two principal elements in existence in every case of prolapsus, sometimes separately, sometimes conjointly.

These are—(1) increased weight or altered shape of the uterus; (2) impairment or destruction of the supporting structures below the uterus. The foregoing classification will not include, of course, every imaginable case: for instance, hypertrophic growths downward from the cervix uteri.

The relation between the various casual elements in ordinary cases is most easily illustrated by descriptions of actual cases.

Thus—(a) During a labor the perineum is torn, the vaginal aperture increased in size; the floor of the bladder, not so well supported as it should be, comes to occupy a position nearer the ostium vaginæ than usual. Slight exertion increases this descent of the bladder, the uterus follows it, and soon comes to take a position lower in the pelvis than usual.

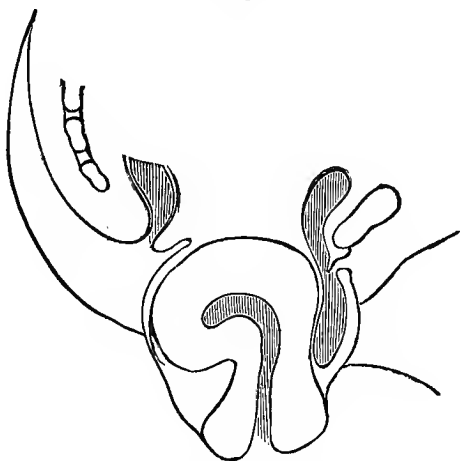
Or (b) concurrently with such enlarged perineal aperture the patient is the subject of defective involution of the

uterus. She moves about too soon after labor, the uterus becomes first a little anteverted, then anteflexed; and the bladder, less supported than usual below and more pressed upon from above, gives way. The result is, perhaps, confirmed anteflexion and cystocele.

A further stage may be witnessed, after the lapse of many years as a rule, viz., complete descent of the whole uterus external to the vulva.

Or (*c*) the patient is unmarried. Anteflexion of the uterus exists. The bladder is slowly pushed downward,

FIG. 130.*



and spite of the uninjured ostium vaginæ it is gradually protruded.

Or (*d*) the patient has shortly after labor acquired a retroflexion of the uterus. The labor has been attended with laceration of the perineum also. Soon the uterus falls lower in the pelvis, the retroflexion becoming at the same time intensified, and first of all the posterior vaginal wall is protruded at the vaginal aperture (rectocele), then follows the fundus of the uterus. At a later stage of the

* Fig. 130 represents a case in University College Hospital, æt. 42. The patient had had two children—the last nineteen years ago. The case was cured by operation.

affection the whole uterus may pass outside the vulva, remaining still, however, retroflexed (see Fig. 130).

Or (*e*) the lower part of the uterus becomes elongated, the effect being that the cervix of the uterus finally becomes external to the vulva, bringing with it the bladder more or less completely. These constitute a class by themselves, and will be presently more fully described.

These illustrations might be easily increased in number.

The foregoing illustrations are put forward with the view of showing the various "first steps," as they may be termed, toward prolapsus. *Occupation* and *age* are two elements of considerable importance in altering the character of the prolapsus in different cases. An occupation involving much standing is certainly provocative of its occurrence in a very marked degree. And as age advances, if the quantity of fat in the body diminishes, the uterus is more apt to descend than it was before.

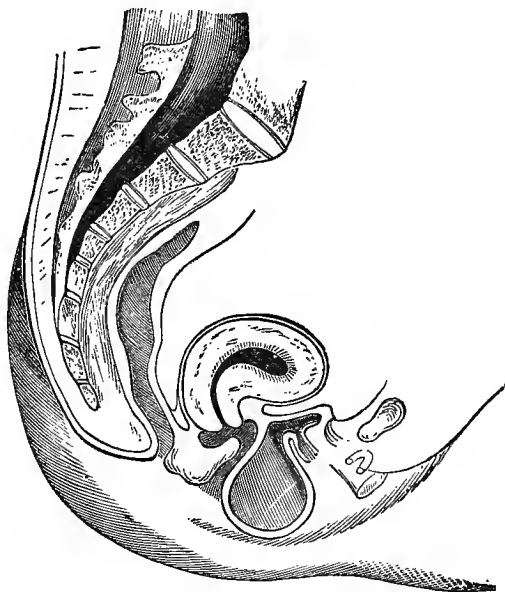
Violent strains are evidently capable of producing prolapsus instantaneously, even when the parts are previously healthy and parturition has not occurred; but ordinarily the action of strains is more indirect, the first effect being to produce a flexion, which flexion is the starting-point, ending finally in prolapsus. Flexions bring about prolapsus very frequently in the following manner: The process of defæcation is impeded by the flexion; the patient finds it necessary to strain very much to procure an evacuation; the whole pelvic contents are thus pressed downward; the supports of the uterus stretched; the flexion intensified; and, by and by, the uterus itself escapes from the vulva.

Cystocele is observed, as already hinted at, chiefly in association with a ruptured perineum and an anteфлекed uterus, but it may occur apart from such injury of perineum, and in women who have had no children. Here the tumor which forms at and protrudes from the vulva is small and readily reduced. Cystocele is also witnessed when the cervix uteri descends externally. This remark applies to that part of the cervix which is connected so intimately with the bladder, and when this part of the cervix descends the bladder must come with it. When the whole uterus is outside the vulva, there must therefore be a considerable portion of the bladder protruded externally. But when the part of the cervix *below* the vaginal reflexion is, as sometimes happens, alone hypertrophied, and projects downward, perhaps in a conical form, through the

vulva, there is, under these circumstances, no necessity for a simultaneous descent of the bladder, and such cases are not usually complicated with cystocele.

Cystocele, though ordinarily not attended with more than discomfort when slight in degree, is liable to become a condition of torture to the patient. Thus a married woman just over forty, who had never had children, presented

FIG. 131.*

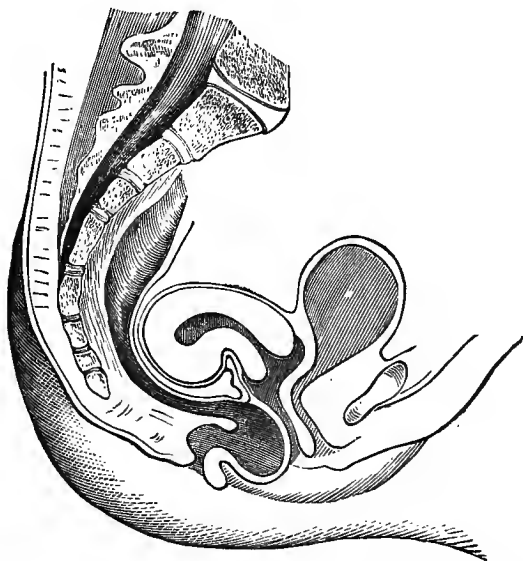


herself for treatment at University College Hospital. There was a tumor the size of one end of a hen's egg protruding, and composed of the bladder. It was sensitive to such a degree that the slightest touch gave excruciating pain. The tumor could not be kept up, intercourse had not been possible for years, and various means had been tried to relieve her; amongst other things, an operation

* Fig 131 represents anteversion associated with cystocele. The case is the one described in the text, where there was excessive hyperæsthesia of the prolapsed, thickened, and hypertrophied bladder.

consisting of removal of an area of vaginal mucous membrane had been unavailably performed. There I found the affection dependent on long-standing anteflexion of the uterus. The case was finally and completely cured by very considerably narrowing the vaginal aperture, but means were at the same time taken to prevent the descent of the fundus uteri anteriorly, which had evidently been the original cause of the mischief.

FIG. 132.*

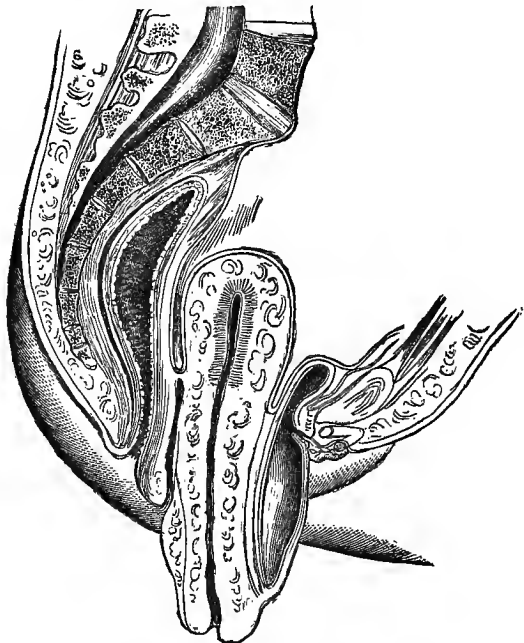


Rectocele, and its relations to prolapsus, constitutes an important subject. Rectocele, which is a simple projection of a loop of the rectum through a defective vaginal outlet, generally arises from laceration of the perineum. It by no means always occurs in cases of lacerated perineum, and it is in fact rather rare by itself. It varies in degree, and I have generally seen it associated with retroflexion of the

* Fig. 132 represents the condition described in the text, the subject of which was a lady, æt. 42, who had been suffering some years; the uterus was affected with chronic retroflexion. The rectum is represented in the condition it always assumed in the act of straining.

uterus, though it is not by any means the fact that cases of retroflexion are generally complicated with rectocele. In some instances the affection is one of the most painful character possible; the straining at stool required to evacuate the rectum is sometimes severe, and, when long continued, I have found it associated with an ulcer of the rectum, bleeding on the slightest irritation, and painful when

FIG. 133.*

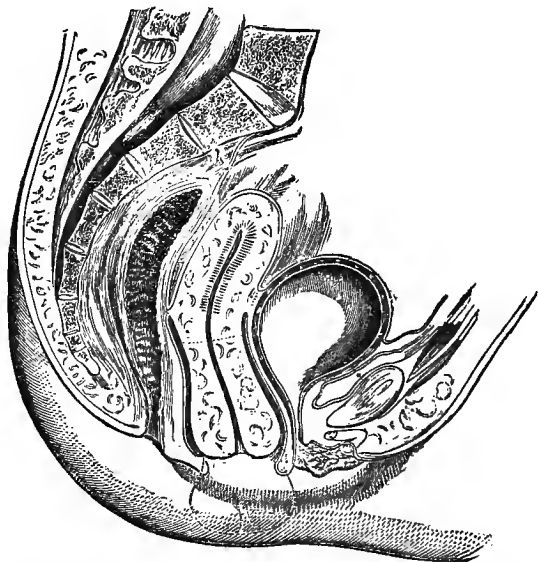


touched to an extreme degree. The nature of these particular cases is liable to be misunderstood, but the explanation seems obvious enough. It is that the bend in the lower part of the rectum prevents the passage of the fæces,

* Fig. 133 represents a case of supra-vaginal hypertrophy of the cervix, the subject of which was a married woman, æt. 47. She had suffered from prolapsus for two years, and had been obliged to wear a box-wood pessary $3\frac{1}{4}$ inches in diameter to keep the uterus up. In Huguier's memoir similar cases will be found delineated.

which are impelled, day after day and month after month, with great effort, against that part of the rectum where the bend is, the result being to produce the ulceration, the bleeding, and other grave symptoms, sometimes to such a degree as to compel patients the subjects of them to declare that life is not worth having at such a price. In some cases, on the contrary, the inconvenience sustained from rectocele is less marked.

FIG. 134.



Hypertrophy of the uterus, and its connection with prolapsus, is a subject requiring a discussion by itself. Huguier,* in 1859, described and figured several cases designated as cases of hypertrophic elongation of the cervix uteri; and his researches have since led to a more accurate discrimination of the varying conditions met with in prolapsus.

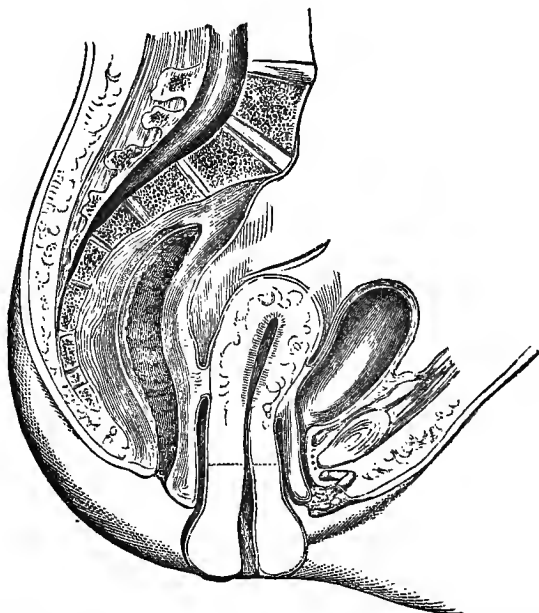
Following his classification, we have cases of (1) Hypertrophic elongation of the part of the cervix above the

* "Mém. de l'Académ. Imp. de Méd.," tom, xxiii.

vaginal reflexion (see Fig. 133). (2) Cases of hypertrophic elongation of the infra-vaginal portion of the cervix. In both these cases the prolapsus which may occur is considerable ; but in the first case the bladder is of necessity prolapsed together with the tumor, while in the second (see Fig. 134) the bladder is not necessarily disturbed.

In both classes of cases the fundus uteri may remain in

FIG. 135.

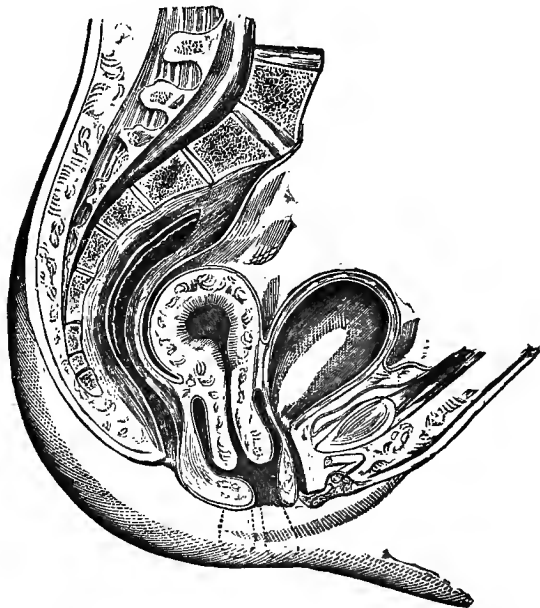


its proper position in the pelvis, and it is obvious that, if there be still a considerable prolapsus, the uterine canal must be enormously elongated. So in point of fact it is, and the distance, as measured by the sound, may be found to be as much as four inches from the os to the fundus uteri ; in extreme cases more than this.

The cases of supra-vaginal hypertrophy are met with chiefly in laundresses and cooks, whose occupations involve long standing. The mechanism of the occurrence of this peculiar elongation of the cervix is curious. It would

appear that the elongation is due to the dragging of the vaginal portion on the supra-vaginal portion of the cervix, in consequence of which the organ becomes stretched. The bladder very probably descends first in these cases, either because the perineum is a little deficient, or because the fundus is inclined forward, and the effect of the descent of the bladder is that the cervix, which is intimately ad-

FIG. 136.



herent to the bladder, descends with it, the result being elongation of the cervix. This mechanism implies a fixation of the upper part of the uterus. In some cases the weight of the vaginal part of the cervix alone appears enough to determine this hypertrophic elongation, when the patient has been subjected to the influences of prolonged standing exertion.

We meet with all gradations of the affection. The accompanying figures represent actual cases. In Fig. 134 we have simple hypertrophic elongation of the infra-vaginal

portion in a young woman. In Fig. 135 is shown elongation of the infra-vaginal portion from a woman who had had children. In Fig. 136 we have hypertrophic elongation of the same portion in association with retroflexion, a rare combination.

I have seen cases in which the external tumor constituted by the prolapsed organs has been as large as the foetal head. Under these circumstances there is great thickening of the cellular tissue around the uterus. The organ itself is greatly thickened and hypertrophied laterally as well as longitudinally, and in some cases, together with the bladder and uterus, certain coils of the intestine pass downward and help to enlarge the tumor.

Huguier's statements as to the frequency of hypertrophic elongation of the cervix are not borne out by my own experience. In other respects, as regards the collateral conditions in these particular cases Huguier's account has seemed to be exact.

The foregoing represent, regarding prolapsus generally, the generalizations I have been led to adopt. The very great importance of flexions, as in many instances the starting-point of the displacement, is a matter which it seems desirable to make prominent.

Various secondary effects result from prolapsus. Thus, in cases of cystocele the bladder is evacuated with difficulty, retention of a small portion of urine is apt to occur, and chronic cystitis may be added as a complication. The uterus itself, when prolapsed, often becomes ulcerated and excoriated, broad patches, the size of the palm of the hand, raw and bleeding on the slightest touch, are observed round the os uteri, these ulcerations being produced by the friction of the tumor against the thighs. The tumor itself, from long exposure, becomes sometimes hard and leathery to the touch, the inverted vaginal mucous membrane losing the characters of mucous membrane and looking more like the adjacent skin. The discomforts connected with defæcation are great, and, as already stated, in the case of rectocele they may themselves become actually torturing. Needless to say, the general discomfort induced by the presence of a tumor at the vulva, changing in size from time to time, impeding locomotion, distressing the patient by giving rise to profuse leucorrhœa, occasional losses of blood, and in many other ways—all these constitute grave ailments.

Lastly, in some cases, the tumor may be so large and so much swollen that it becomes actually strangulated and mortification sets in; again, inflammatory adhesions may occur to such a degree round the pedicle of the tumor that its return is found difficult, and in a few cases impossible.

DIAGNOSIS.

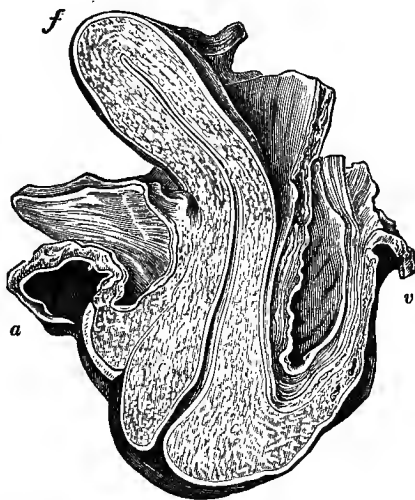
All cases of prolapsus uteri have this in common, that the os uteri is the lowest point. In other respects, the variations observed are exceedingly great. In the most simple form of the affection the cervix uteri is felt rather lower than usual, and the vagina proportionately shortened. In its extreme degree, on the other hand, the uterus descends so low down as to be almost altogether outside the ostium vaginæ; and in this case the vaginal canal is completely inverted, the bladder is dragged externally also, and the rectum may be displaced in like manner. Thus, in a bad case of prolapsus uteri we may have combined, descent of the uterus with prolapsus of the bladder and rectum (vaginal cystocele and rectocele).

If we find a conical, firm tumor, smooth on the surface, projecting downward in the vagina or beyond it, and the os uteri situated at, or close to, its extremity, the case is one of *hypertrophy and elongation of the vaginal portion of the cervix uteri*. With such a condition there is usually found no considerable amount of prolapsus of the vagina, and the finger encounters the *cul de sac* of the vagina in about its usual position (see Figs. 134 and 135). The shape of the tumor is generally conical, but it may be larger at the extremity than at the base; one portion of the lip may be larger than another, in which case the opening appears to be not quite at the extremity of the growth, and the os itself may be fissured and ulcerated according to the degree of irritation to which the part is exposed. The general shape, the firmness of the tumor, and the position of the os uteri, sufficiently distinguish it from other tumors occupying the vagina.

Hypertrophy of the Supra-vaginal Part of the Cervix.—In this class of cases there is prolapsus of the vagina, and the finger cannot consequently be introduced as far as usual. The use of the sound will render it evident at once whether the descent of the os uteri, bringing with it the vagina, is due to descent of the whole uterus, or to hypertrophy of

the lower part of this organ—the cervix. The attachment of the cervical part of the uterus to the bladder in front is such, that when the cervix is projected downward the bladder comes with it; the extent of the prolapsus of the bladder is, as a rule, dependent on the degree of the former. Fig. 137 (from Dr. Farre) represents such a condition. (See also Fig. 133.) In like manner, the rectum is liable, but in a less degree, to be prolapsed with the lower part of

FIG. 137.



the uterus; and the result is that in cases of extensive prolapsus of the cervix, whether with or without hypertrophy of the part, there is a soft tumor in front—the bladder—and a smaller one behind—the rectum—between which two the os uteri is situated. A combined examination of the rectum by the finger and of the bladder by means of the sound, will determine whether or not the fundus uteri is in its proper position; the use of the uterine sound gives information of a like character.

True prolapsus of the whole uterus may be found associated with ascites, ovarian tumors, or both, or with relaxation of the vaginal structures, consequent on frequent child-bearing.

Prolapsus, complete or produced by hypertrophy of the supra-vaginal portion of the cervix, could hardly be mistaken for polypus, inversion of the uterus, or large tumors growing from the os uteri, if attention were paid to the position of the os in reference to the body of the tumor. Cases of hypertrophy of the vaginal portion alone might possibly be confounded with a polypus projecting into the vagina from the interior of the uterus, in those instances in which the os uteri is distorted, partially effaced, or so altered as not to be recognized as such by a casual observer. I have known an instance in which a lady was treated for prolapsus and made to wear a pessary for several months, the tumor being a well-marked specimen of polypus, attached by a slender pedicle to the interior of the cervix uteri.

Prolapsus combined with Pregnancy.—In some rare cases the uterus, although prolapsed, becomes impregnated. It would be a serious mistake to use the sound in such a case, and to induce abortion. It is sufficient here to give this caution on the subject.

TREATMENT OF THE VARIOUS FORMS OF PROLAPSUS.

The various forms of prolapsus of the uterus, vagina, etc., having a different mechanism in different cases, the treatment necessarily varies. Success in treatment cannot be obtained until due importance is attached to the various elements concerned in the production of the prolapsus.

We may consider, in the first place, the treatment of those cases in which there is *hypertrophy of the cervix*—the prolapsus being for the most part due to, or constituted by, this hypertrophy.

(a) *Cases of Hypertrophy of the Vaginal Portion alone.*—It appears that in many of these cases the hypertrophy of the cervix may be very greatly diminished by appropriate treatment—viz., by rest, by frequent hot douches, and by the use of astringent applications. Further, that in a certain number of these cases the hypertrophy at the os uteri is due to laceration of the cervix and consequent hypertrophy and eversion. Cases of the latter description should of course be dealt with by the operation described in a former chapter.

The great length of the cervix sometimes appears to

be capable of undergoing great reduction by appropriate measures, particularly rest and absence of traction on the cervix. Still cases remain in which after proper treatment has been employed the only real cure consists in amputation of the enlarged cervix. The removal may be effected by the knife or curved scissors, by the wire or chain *écraseur*, by the galvano-caustic apparatus, or by Paquelin's thermo-cautery. The knife is the more expeditious and manageable; but the hæmorrhage from the cut surface is often very troublesome. An objection to the *écraseur* is that, unless the chain fits closely into the apex of the instrument, there is a liability of drawing into the instrument tissues which ought to be left uninjured. Hence, if the chain *écraseur* be used, the chain should be applied, not close to the summit of the vagina, but a little below this. Dr. Thomas describes in his last edition a pair of forceps with long teeth, by means of which the cervix is seized prior to the amputation, and the slipping upward during severance by the wire thus prevented. The galvano-caustic apparatus has, like the *écraseur*, the advantage of preventing hæmorrhage. On the whole, the course to be recommended is the use of the knife, or curved scissors, if the neck of the growth be very thick—the cautery being ready for use to arrest hæmorrhage, and the use of the chain or wire-rope *écraseur* (see Fig. 138), or the thermo-cautery when the neck of the tumor is smaller. Lint soaked in tincture of sesquichloride of iron on the cut surface, and carefully plugging the vagina by means of the speculum, as in ordinary cases of uterine hæmorrhage, will be effectual in arresting the bleeding in many cases. In any case, prior to performing the operation, the tumor should be gently pulled down as far as possible, to facilitate the necessary manipulations. It is a wise precaution to transfix the cervix *above* the line of the contemplated incision, and to pass a stout piece of string through it before performing the excision, for it often happens that the uterus retracts, and bleeding is thereby less under control.

Dr. Marion Sims has practiced a modification of this operation. This consists in covering the stump, as it may be termed, of the amputated part, by mucous membrane; the anterior half being covered with mucous membrane previously dissected off, and being made to lap over, as in the flap operation in ordinary amputation; and the posterior

half being covered by a flap similarly made from the under surface of the cervix. When the bleeding is trifling and readily checked, this procedure renders the operation more neat and perfect. If styptics have to be used, the covering of the stump with mucous membrane will be useless, as no union can occur.

(b) *Cases of Hypertrophy of the Supra-vaginal Portion of the Cervix Uteri.*—Cases of hypertrophic elongation of the cervix are now not uncommonly treated after the manner proposed by Huguier—viz., by excision; and this plan I have satisfactorily carried out in some few instances.

When the hypertrophy is very great this is the only satisfactory treatment; but before deciding on its necessity, the patient should be kept in bed for a week or two, in order that it may be ascertained how far the affection is reduced by this rest. It is the fact, as pointed out by Kiwisch, that rest materially reduces the bulk of the cervix under these circumstances. Rest and prolonged use of cold effusions would do still more. But when the disease is of long standing, and the uterine canal exceeding a total length of four inches, such palliative measures are inadequate. And the poorer classes, amongst whom the disorder is most marked, can ill afford the prolonged rest and attention requisite. Two plans of a palliative nature are open to us—(1) The use of pessaries, and (2) the closure of the vaginal orifice to such an extent as to prevent the escape of the cervix uteri, after a plan to be presently described. Each of these methods of treatment has peculiar advantages, according to the nature of the case. In many instances they prove sufficient; but in some few cases, as might be surmised, they are either inapplicable, or, in the long run, unsatisfactory.

The operation of Huguier is accomplished as follows: An incision is made behind the os uteri through the vaginal wall, of a semicircular form, and directed toward the centre of the cervix. Dissection is now made upward, in order to expose the hypertrophied cervix, and separate it from its connections posteriorly—great care being necessary to avoid the reflection of peritoneum there situated. A corresponding incision and dissection is made now in front; here, however, great care is necessary to avoid injuring the bladder. As much of the cervix having been exposed as is considered advisable, it is removed by the knife. Huguier at first em-

ployed the knife in removing the cervix, but subsequently the *écraseur*, finding the hæmorrhage troublesome when the knife is used. Such is an outline of the operation in question. The result is that a conical piece of tissue is removed, including the os uteri, the vaginal, and a portion of the supra-vaginal part of the cervix. In the original memoir before referred to, Huguier states that he had performed the operation in fourteen cases. In only one of such cases a fatal result—not due, however, to the operation—followed.

The operation is, judging from my own experience, a sound one, and in some instances offers the shortest road to the cure of the patient. The dissection and exposure of the cervix is the part attended with most difficulty, and it must be done with care. The bladder may extend to within half an inch of the os uteri, in which case it is evident that great caution must be required to avoid wounding it; again, the peritoneal reflection behind must be sedulously preserved intact. By keeping close to the cervical hard tissue these objects are secured. A sound in the bladder shows the position of that viscus, and acts as a good guide during the operation. For the dissection itself scissors should be used; the knife occasions troublesome bleeding. I believe that a deep dissection—beyond an inch and a half, or at most two inches—is rarely required; for if the hypertrophied and, usually, thickened cervix be excised to this extent, the rest, which necessarily follows the operation, will suffice to complete the cure. Retraction of the severed cervix must be guarded against by previously transfixing the uterus above that point. The edges of the mucous membrane may be brought over the stump, and the opposite side secured by sutures so as to cover it, after Dr. Sims's plan, if it be preferred.

Of the various forms of the *écraseur*, the steel wire-rope

FIG. 138.*



* *Écraseur* to be used with annealed steel wire. (Meyer & Meltzer.)

écraseur is more useful in amputating the cervix in such cases. In Messrs. Meyer & Meltzer's instrument (see Fig. 138) the wire and the slit fit accurately, and there is less liability to draw in extraneous tissues, while the power of the instrument is exceedingly great.

Prolapsus without Elongation of the Cervix.—These include the more ordinary cases of prolapsus. In dealing with this class of cases, the indications are almost always various; the treatment must have regard both to the primary cause and the secondary effects. (1) The condition of *the uterus itself*, and (2) the condition of *its supports*, have to be considered, and appropriate measures devised for rectifying defects and disorders.

1. *The Condition of the Uterus.*—In most cases of prolapsus the starting-point has been a defective or altered condition of the uterus, which would have proved perfectly and completely amenable to treatment. Apart from those special cases of hypertrophic elongation of the cervix which have been already dealt with, the condition of the uterus which most frequently calls for therapeutic measures in cases of prolapsus, is undue size and fulness of the organ, very frequently indeed associated with long-standing flexion and other troublesome alteration in its shape. The treatment required in cases where there is flexion, so far at least as the uterus itself is concerned, has been discussed under the head of Flexions, and it need not be here repeated. It must not be forgotten, however, that cases of prolapsus, really due primarily to flexion, cease to present that element in a recognizable form when the affection has lasted many years. All we see then is the extremely advanced prolapsus; the uterus itself is by that time otherwise changed.

Among the general measures always required in these cases, rest, very careful attention to the bowels so as to avoid necessity for straining, injections, and a careful dietary, are very important.

2. *The Condition of the Uterine Supports.*—The methods of treatment which have formerly been had recourse to for preventing or curing prolapsus were based on the one idea of keeping the tumor from escaping at the vaginal aperture. Bandages, external pads, boxwood or disk-shaped pessaries applied internally, were the principal measures of "supporting" the uterus and supplying defects of the natural supports. Next came improvements in the shape of opera-

tions for constricting the canal of the vagina, and thus restoring the lost support in a more natural manner. But there is yet room for improvement, and that improvement is only to be attained by a careful attention to the restoration not simply of the *outlet* of the vagina, but the position of the uterus in the pelvis. In other words, it is not sufficient to simply shut up the uterus in the vagina by means of a perineal operation, for most assuredly, if the uterus be in a chronic flexed state, it will continue to excite expulsive efforts, and the restored perineum will by and by give way. Even in single women who have never had children, and when the perineum has never been dilated or destroyed by a foetal head, very extreme degrees of prolapsus are sometimes witnessed.

Supposing the uterus to have been reduced by treatment to its proper size and shape, we have next to consider *how to maintain it in its proper place in the pelvis*. It must be quite obvious that unless this indication is complied with, the evil is likely to recur. It is in this direction that improvements in the treatment of prolapsus must be made. The cervical part of the uterus should occupy a position in the pelvis which is as nearly as possible its centre. The mechanism applied and the operations devised must have regard to this important circumstance.

Instead, therefore, of endeavoring simply to keep the uterus within the vagina, attempts should be made to maintain it in position at the top of this canal, which is its proper place. Admitting that this perfection of treatment is not possible in all cases, it is nevertheless practicable in most instances.

The principle of treatment which fulfils this indication is to render the vaginal canal rigid, thereby giving support to the lower part of the uterus, and to adopt such other measures as may maintain the vaginal canal in this rigid condition. In many cases this rigidity of the canal can be supplied by means of a pessary which, adapted to the requirements of the patient, becomes practically an artificial vaginal stem to the uterus; and in certain other cases, where the vaginal aperture has become too large to retain such an instrument, it must be constricted by operation.

Apply these principles to the consideration of actual cases. Cases of slight cystocele associated with ante flexion may be generally cured by the wearing of a well-adjusted "cradle" pessary as described in the treatment of ante-

flexion; but if the cystocele be of long standing, a constriction of the vaginal aperture by operation is necessary, the instrument being worn subsequently. An air-ball pessary is a palliative measure in some of these cases, where the cradle is inconvenient, or difficult to adjust, and where the perineal aperture is not much increased in size. In the case delineated in Fig. 131 no treatment short of a considerable narrowing of the vaginal aperture was sufficient, the prolapsed portion of bladder being hypertrophied and much thickened.

In cases where the prolapsus is dependent simply on retroflexion of the uterus without much laceration of the perineum, the Hodge pessary is a most admirable instrument when properly adjusted. It carries out the indications above alluded to, maintaining the vagina in its proper position, and, at the same time, and often quite efficiently, preventing the uterus from resuming its retroflexed position. Within certain limits it acts very well, but attention must be paid to the following points. As stated in the chapters on Flexions, if the flexion be of long standing the pessary alone may fail to cure it, other measures being requisite; but, once cured, the pessary will prevent its recurrence, and, moreover, it will, if there be sufficient perineal support below, prevent prolapsus occurring. The instrument must be adapted to the size of the vagina. A pessary made from a ring three inches or three and a quarter inches in diameter, having the shape shown at page 266, generally answers the purpose in such cases as those contemplated; it must sometimes be made broader below than above. The copper-wire india-rubber covered rings which I employ lend themselves admirably to the necessary process of fitting, for nothing can be a greater mistake than to suppose that one instrument will fit all cases. The instrument must be adjusted to the case, and, when properly fitted, may be worn for months without inconvenience. In some cases the watch-spring india-rubber covered round pessary answers very well; but only when the perineum has been properly repaired.

If there be rectocele, whether associated with retroflexion or not, the case generally requires an operation to restore the injured perineum. Subsequently, the uterus often requires to be sustained in its position by a pessary, as above directed for retroflexion. The rectocele may be slight in degree, the tumor small, but instruments are useless in

such cases, because the prolapsed bowel is so near the vaginal aperture. The discomfort attending these cases of rectocele is sometimes relieved by giving very small (teaspoonful) doses of castor-oil every morning.

We next come to those cases where the mass protruded is large, and where the vaginal aperture is very large, because it has been very much torn in labor. When the whole mass prolapsed does not exceed the size of a hen's egg, we may hope, under favorable circumstances, to satisfactorily treat the case, without an operation, by the use of instruments. Sometimes we are foiled even then, for what appears to be a tolerably good perineum may not give sufficient basis for maintaining a suitable pessary in its place. When the mass exceeds in bulk the size of an egg, a real cure is rarely obtained without an operation.

First of all we may speak of palliative measures, for even in the worst cases some patients reject operative measures, and in some the age of the patient or other circumstances put an operation on one side.

The mere *reduction of the tumor* is sometimes very difficult, when the parts have been some weeks prolapsed, and the neck thickened by inflammation. To effect reduction the urine should be removed by catheter, the patient placed in a favorable position, and the pedicle or neck of the tumor well covered with oil. Seizing the tumor between the two hands it is then gently compressed from side to side, and pressed upward, the attempt being made in such manner that the part *last* prolapsed shall be first reduced. Attempts made otherwise and by simply pushing the mass in an upward direction may altogether fail, but the plan above directed I have always found successful. Dr. McClintock suggested strapping the tumor in order to reduce its bulk. I have never found this necessary. The ulcerations or abrasions of surface seen in such cases readily heal when the tumor is reduced.

There are no doubt many cases in which the uterus is much hypertrophied and has become prolapsed with or without considerable increase in the size of the cervix, and which at first sight may seem difficult to treat without some operative procedure, but it will be found that by a continuous system of rest, irrigations of the uterus, use of astringents, etc., the bulk of the organ becomes greatly reduced, and the case loses its formidable characters. Dr. Emmet in the last edition of his valuable work tells an amusing

story, illustrative of this part of the subject. An eccentric but shrewd physician of the Currituck district, after having been shown Dr. Emmet's cases and practice in cases of prolapsus, told him he could cure any case in ten days. His practice was among the negroes. "His plan was to swing the woman in a sling from a beam, in the knee-and-chest position. This was maintained for ten days, during which time the vagina was kept filled with a strong decoction of oak bark, which was changed every day by means of a syringe. The sling was padded, the woman slept all the time, and was not disturbed except to receive her food or answer a call of nature." "The principles of the treatment were," Dr. Emmet states, "correct."

Internal Supports.—In a case where the uterus has been in a state of retroflexion a pessary must be adapted suited to the case. It generally happens that in the cases coming properly under consideration in this place an ovoid ring answers extremely well, but the Albert Smith type of Hodge pessary is necessary in many instances. The quite round, rather thickly covered watch-spring pessary answers well in some cases. In a few the disk-shaped ebonite pessary is found suitable; various sizes are required. In some cases I have found a rather large cradle pessary most serviceable, particularly in cases where the uterus has been previously in a state of anteversion. The use of these supports is, in bad cases, not generally satisfactory, unless the perineum has been effectually restored by operation.

Various forms of air pessaries, globular as well as disk-shaped, are kept by the instrument makers, but they are not satisfactory for prolonged treatment, while open of course to objections already mentioned.

Zwank's pessary has been in rather general use. It is an unscientific instrument, inasmuch as it distends the vagina very greatly from side to side, and perpetuates the prolapsus by dragging the uterus still lower toward the vulva; the only merit it possesses is, that it prevents the escape of the mass from the vulva.

External Supports.—Under this head are included mechanical contrivances for preventing prolapsus, having their fixed point from without. The perineal pad and bandage consists of an elastic, or non-elastic, abdominal belt, which is the fixed point, and a perineal pad, which is of a flattened egg shape, and is so adjusted by a strap fixed anteriorly and posteriorly to the abdominal bandage as to press upon

the edge of the perineum. The pad is sometimes made elastic by means of an india-rubber air-ball. This apparatus supplies in some degree the deficiency of the perineum, and prevents in some cases of prolapsus the expulsion of the mass outside the vulva. Here of course its function ceases. In some cases straps passed over the shoulders are the fixed points, being used instead of, or as an assistance to, the abdominal bandage.

Another principle of treatment consists in the use of a rigid stem of metal or other material, which, terminating above in the form of a small ball, or cup-shaped, is maintained in the vagina by means of a perineal strap, attached to an abdominal bandage. External frameworks of metal fixed anteriorly to the abdominal bandage, or to a kind of hernia belt, may be made the basis of support to such intra-vaginal stems. It is obvious that from without it is possible in this manner to adjust an internal support very firmly. The inconvenience attached to the wearing of such external solid mechanical supports is a great objection to them, but if external supports are to be made really efficient, some such principle of construction as this is required. Obviously, the alternative is the performance of an operation which will radically cure.

Radical Operations.—The success with which the very worst forms of prolapsus can now be treated by operation will render this method more and more popular, especially if after such operations care be taken to deal with the uterus, and promote its restoration to shape and position in the pelvis. The principle of the operation is to *constrict the vaginal canal*. Dr. Marshall Hall seems to have been the first to suggest it, and Mr. Heming the first to have practiced it. The part of the vaginal canal so dealt with was at first the lower aperture or entrance of the vagina, and this operation received later on important developments at the hands of Mr. Baker Brown, Dr. Savage, and others. A further step consists in the constriction of the vaginal canal higher up *as well as* at the vaginal aperture.

With respect to the merits of these various operations, much will depend on the case itself. A simple perineal operation is sometimes quite sufficient when the vagina has not been much distended, but when the protruded mass is considerable the vagina is necessarily much stretched, and simply to close the aperture of the vagina is attended with no permanent benefit. Many cases require a sort of com-

bined operation, a restoration of the perineum and a narrowing of the canal itself for some little distance upward.

The Perineal Operation.—It may be well in this place to consider the treatment of ruptured perineum in its entirety, including recent as well as chronic cases.

When the perineum is torn in the process of labor, the rent extends to a variable depth backward, sometimes destroying the whole sphincter of the rectum, in other cases not affecting the sphincter at all, but subtracting little or much from the perineum. If the rent looked at immediately after the labor is over exceeds an inch in depth, it may be said to be a case for operation. By "immediately" is meant in this place a few minutes after the birth of the child, at the time the parts are customarily inspected. Some days later a rent one inch in depth originally will have become diminished—even in cases when no union has occurred—very materially. And what has appeared a rather large rent perhaps is then found to be comparatively trifling. When the rent is at all considerable, however, the operation is required.

The *primary operation* should be performed within one hour from the birth, while the surfaces are still raw and bleeding. The surfaces are generally very well secured in apposition by rather deeply applied silver-wire sutures: two or more may be required. I have found them most easily introduced by means of a needle two and a half inches long, and bent into a completely semicircular shape. Such a needle can be employed with the patient lying on her side in the ordinary obstetric position. The sutures should go to the bottom of the wound, and they should come out on the surface some way from the edges. So performed, the operation is very simple. The nurse carefully and frequently dries the parts with soft lint, not using water, the knees are tied together, the catheter is employed, the bowels not allowed to act for at least three days, and on the fourth or fifth day the sutures can be removed. The result is generally very satisfactory. It is quite true that by rest and position union will sometimes occur without use of sutures, but this result cannot be depended upon, and the primary operation is so little troublesome or painful to the patient, that unless the rent is very slight, it is best so to perform it. It is of very little use inserting sutures when the labor has been over some hours; union rarely then occurs.

The *secondary operation* (A) should not be performed until

at least one month after the labor, Careful inspection of the parts is required to determine on the line of procedure. Good health, avoidance of erysipelatos influences, a dry, well-ventilated room, are essentials to success. The bowels should be previously carefully evacuated. Dr. Thomas very properly insists on the necessity for use of aperient medicine for some days previous to the operation, in order to dislodge any possible accumulations, but it is best, I consider, to use injections and not medicine during the two days preceding the operation. In long-standing cases of prolapsus, complete rest in bed for some days is quite requisite, and all ulcerative processes should have ceased. The

FIG. 139.*

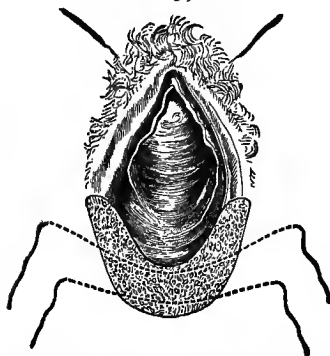
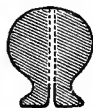


FIG. 140.



hairs near the part to be operated on are first removed by a razor, the patient having been placed in the lithotomy position at the edge of the table. A semilunar incision is first made corresponding to the edge of the perineum, and indicating the outer edge of the surfaces to be bared. A corresponding internal semilunar incision is next made within, as shown in the annexed figure (Fig. 139); and the internal and external lines of incision connected by two horizontal cuts. The strip of mucous membrane enclosed is then removed by the scalpel or scissors. Some operators prefer the scissors, as the bleeding is less. The extent of this surface so removed varies in different cases. It should

* Fig. 139 shows the shape of the raw surface in ordinary cases. The dotted lines indicate the position of the hidden deep wire sutures.

always be deeper in the middle line (the floor of the vagina) than at the two extremities of the horns of the crescent; from one inch to an inch and a half in width is required in the middle line. The opposite sides, thus rendered raw, are next brought together by deeply inserted sutures. The quill suture, or modifications of it, were formerly employed. I have used for some time past beads made of ebonite, and of such a form as to allow of the wire used being easily attached to them (see Fig. 140). They are little balls with a projecting neck, and perforated through the middle. They possess the great advantage of permitting any easy regulation of the tightness of the suture, and allow of a better circulation in the soft tissues implicated. The quill suture is apt to give rise to great swelling and even sloughing of the new perineum; but I have never seen this happen with the bead suture. The deep sutures, two or three in number, are inserted at a distance of about three quarters of an inch from the edge, and the needle carrying the suture should so pass *as not to be visible until it emerges on the skin on the opposite side*. One of the sutures at least should pass as deeply as this. When the deep sutures are inserted, they should be temporarily tightened in order that it may be ascertained by the touch internally that the internal edges are really in apposition, otherwise gaping results, and union will not occur. Failing this, the deeper ones must be re-inserted. The finger should be inserted in the rectum in order to be sure that the suture does not enter this canal. Rather stout silver wire is, I consider, preferable, and the needle used must be a perforated one, having a nearly semicircular large sweep, and a large firm handle. It is rather more difficult to pass such a needle through, but the purchase thus obtained is more perfect. The ends of the wire are readily secured to the perforated beads. When the deep sutures have been fixed, two or three superficial ones are generally requisite, for which a smaller wire serves best. The knees are then tied together, and the patient removed to bed. In my opinion the best after-treatment of the wound is to use no water, but simply a piece of dry lint for the purpose of drying the surface, which latter should be done frequently. Position on the side, but the side may be changed from time to time. The deep sutures to be loosened or removed at the end of three days, the superficial ones rather later. As regards the material for the sutures, silk or catgut are preferred by some

operators to silver wire. Dr. Granville Bantock prefers silkworm gut, and he employs no beads or other appliances externally, simply knotting the sutures in the middle line. Dr. Chambers uses wire, fastening the wire in the middle line by means of Aveling's coil and shot.

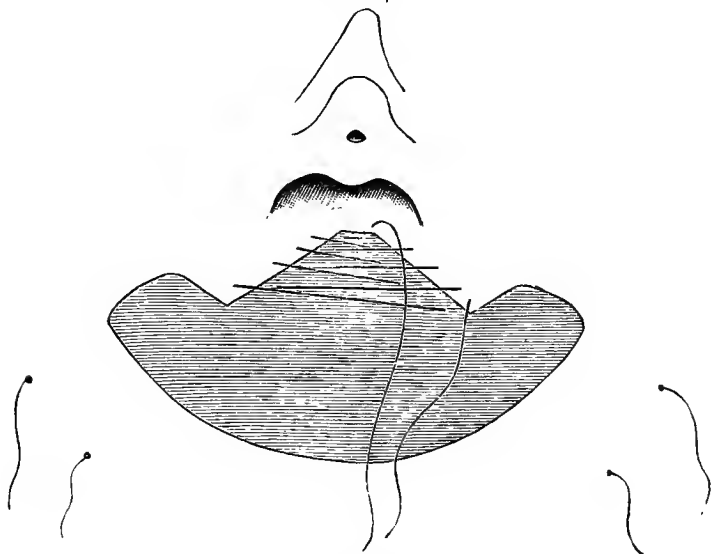
It was formerly the practice to give opium for some days, to prevent action of the bowels, but some operators—Dr. Bantock for instance—prefer to evacuate the rectum after two days by means of an injection of olive oil. This should be carefully injected by means of a small tube, or mischief may be done. If the operation is simply a restoration of the perineum, without involving the rectal sphincter, the difficulty of procuring an evacuation without interference with the reparative process is much less considerable. The use of the catheter for the first three days was considered essential, but it is now frequently dispensed with.

The *combined operation* (B), consisting of constriction of the vaginal canal as well as its lower aperture, I have practiced in the following manner: One plan is to remove a triangular strip of mucous membrane about two inches broad below, and about half an inch broad above, from the floor of the vagina, the upper end or apex of the triangle being quite close to the os uteri. The ordinary operation (A) is then performed as described above. The shape of the surface thus bared is shown in the annexed drawing (Fig. 141). Another plan is to remove *two* triangular strips from the vaginal canal, one on each side of the floor of the vagina, the operation (A) being superadded. When the edges of these triangular bared spots are brought together, the vagina is of course proportionately constricted. The method which I have pursued of maintaining the edges in apposition is to use a stout piece of silver wire. By means of a short curved needle, such as is used in vesico-vaginal fistula cases, the stitch used after *post-mortem* examinations is employed to bring the edges together, beginning from above. As the wire is drawn through it is straightened, and finally constitutes a kind of splint. In Fig. 141 the arrangement of the suture is shown before the wire is pulled straight. The upper end of the wire, which is close to the os uteri, is turned downward to prevent its scratching, and cut off short; the lower end projects at the perineum, and is twisted round one of the beads when the operation is completed. This splint-stitch, as it may be termed, answers very well; healing generally occurs, and the wire, having done its

work, comes away in four or five days without trouble or necessity for stretching the perineal wound. If two triangular strips are removed, the same procedure is adopted with each of them. This combined operation at once restores the perineum and removes the superabundant and hypertrophied vaginal walls.* The two operations may be readily performed at one and the same time.

Dr. Savage describes a method of operating which substantially much resembles the above. He extends the

FIG. 141.



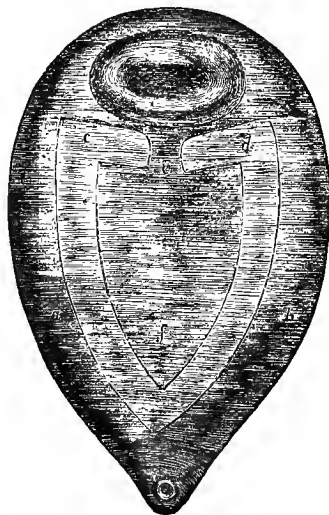
perineal operation by removing the mucous membrane upward along the floor of the vagina, but he relies on deep sutures for producing coaptation. Such coaptation along this internal line can only be produced by the deep sutures at the cost of shortening the vagina altogether. Such shortening, inasmuch as it implies descent of the uterus, I consider objectionable, and therefore the use of separate sutures for the vaginal floor are to be preferred. I have

* This method of constricting the vagina was first described by me in the *Lancet*, June 5, 1869.

performed the above combined operation in several cases, and find it a satisfactory one, and I know that it has been performed and found satisfactory by others. The plan of extending denudation along the floor of the vagina in form of a triangle, as in the above operation, has been also practiced by the late Professor Simon and others under the term "posterior colporrhaphy;" the edges being, however, approximated by ordinary stitches.

Another method of narrowing the vagina in the same part is that of Bischoff of Basle, described by H. Banga*

FIG. 142.



of Chicago, the effect of which is that the lower part of the vagina is not only narrowed, but, owing to the elongation of the perineum, its axis is brought forward. A tongue-shaped flap is separated in the direction upward, and each edge of it is united by sutures to the posterior edge of the ordinary lateral denudation. The procedure is very ingenious. Banga states that since 1875 forty such operations have been performed by Bischoff, Engli, and Banga, with only one death, and that when amputation of the cervix was also performed.

* *Amer. Journ. of Obst.*, vol. xi., p. 247.

Operation for constricting the Upper Part of the Vagina.—Dr. Marion Sims* describes this operation as follows: The operation consists in removing a V-shaped piece of the mucous membrane forming the roof of the vagina, and therefore covering the bladder. The apex of the V is near the urethra, and the two arms reach to the side of the cervix uteri. Finally, the shape of the excised surface is that represented in Fig. 142. The opposite denuded surfaces are next brought together by means of sutures, *a* to *b*, *c* to

FIG. 143.

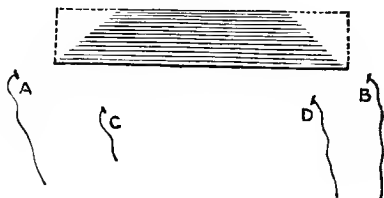


FIG. 144.

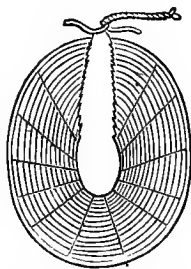
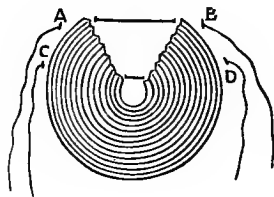


FIG. 145.



d. The effect is, that the vagina has its canal much contracted; a little pouch is left opening at *e* (into which the uterine cervix might slip if the opening be left too large, as in cases reported by Dr. Emmet) for escape of the secretions of the part. Dr. Sims advises that, subsequently to the operation, the patient be kept in bed, or in the recumbent position, for two or three weeks, the bowels to be confined for a week, the catheter to be used. The lower sutures are removed in eight or ten days, the upper ones in a fortnight. The principle of Dr. Sims's operation is to

* *Op. cit.*, p. 310.

constrict the vagina superiorly, and the constriction is effected by removing part of the *roof* of the vagina.

Perineal Rupture with Destruction of the Rectal Sphincter.—In cases where the sphincter ani is entirely destroyed the difficulty in restoring the integrity of the parts is very great. Dr. Emmet in 1873 published the results of his experience as to the best method of dealing with such cases.* He points out that the fibres of the severed muscle are in a state of retraction, those which formed the inner surface of the circle being more retracted than the others; the result being that a convex surface is presented at the floor of the rent. It is necessary to denude the surface on each side farther back than at first sight seems necessary. The diagram (Fig. 143) shows the retraction of the fibres after rupture. The suture A B will, Emmet points out, only imperfectly bring the parts together; Fig. 144 shows the action of the suture. It is necessary to introduce a suture at a lower level, as at C D; and the action of this suture is shown in Fig. 145. The suture C D is first secured, the bowels are relieved on the sixth day by castor-oil, the sutures being removed the day after. Dr. Emmet has exhibited great ingenuity in detecting and in surmounting what had before seemed a great difficulty, and any one who has attempted the operation will appreciate the truth of this.

Mr. Lawson Tait practices an operation for the cure of severe perineal rupture coupled with laceration of the sphincter.† He denudes the surfaces in a peculiar way by cutting into the tissues along the line of the laceration to a certain depth, and then opening out the raw surfaces thus produced and bringing those of the two opposite sides together by sutures, which are so introduced as to bring the deep angles of the incisions into approximation. The innermost of the sutures are in the vagina, the outermost are on the perineal surface.

* Latest particulars in his 2d edit., 1880, p. 402.

† "Obst. Trans.," vol. xxi., p. 292.

